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ABSTRACT.

In 1967, the New York State Library at Albany (NYSL) developed a tape-oriented, off-line serials control system for 10,000 active titles. The system would perform all the serials control functions: bibliographic control, check-in of current receipts, claiming for gaps in receipts and late issues, binding notification for completed sets, subscription renewal, payment control of invoices, and the reporting of statistical data. After two years of operation, the GE 235 computer was converted to a CDC 3300. The NYSL system requires 85 data elements and is primarily a control record with some bibliographic data. Data base creation was the most time-consuming task, as it involved gathering data from diverse files and generating control data for claiming and binding. The experience of NYSL has shown the effectiveness of a KWIC Index for multiple access to the file and practical use of Computer Output on Microfilm. Samples of conversion forms, system outputs, flow charts, a list of data elements, and record layouts are contained in appendixes. (Author/KC)

NEW YORK STATE LIBRARY

AUTOMATED SERIALS CONTROL SYSTEM

BY
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The University of the State of New York
The State Education Department
The New York State Library
1974

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PREFACE

This report describes one of the pioneer systems for using a computer to perform a wide range of serials control functions in a large library. Although primarily descriptive, the report attempts to be honest and objective in identifying and describing both problems and achievements.

The individuals who have contributed to the development of this system, and to this report, are too numerous to acknowledge by name. Although anonymous, each, nevertheless, has our gratitude.

We are proud that New York State had the foresight to dedicate major resources to this project. We hope that this report, which records the experience of one library's application of automation to serials control, will provide information of use to others in the field of library automation.

John A. Humphry
Assistant Commissioner for Libraries

New York State Library
Albany, New York
April 1974

ABSTRACT

In 1967, the New York State Library at Albany (NYSL) initiated the development of a tape-oriented, off-line serials control system for 10,000 active titles. The goal of the system was to increase the utility of the Library's serials holdings by providing greater control over it and by facilitating access to it. The system was envisioned to encompass the traditional functions associated with serials processing in libraries: bibliographic control, check-in of current receipts, claiming for gaps in receipts and late issues, binding notification for completed sets, subscription renewal, payment control of invoices, and the reporting of statistical data. A major constraint in the design of the system was the use of existing computer facilities. At the initiation of the project, the available computer was a GE 235. After 2 years of operation, the system was converted to a CDC 3300.

The NYSL serials control system can be described in terms of its man/machine procedures. The bibliographic control for a new title is established in the machine file at the point of order. Subsequent to the initial conversion of the record, it is accessible for check-in, claiming, and binding. The bibliographic data is updated after cataloging. The check-in of daily receipts is performed via a weekly check-in list which is computer-produced and includes all of the titles in the system. The receipt data are manually coded on input sheets which are keypunched and used for updating the master file. Claim notices are automatically produced for gaps in receipts and for late issues. An issue is late if it has not arrived at the library after it is "due." Due dates for unpredictable serials are based on a predefined schedule. For those serials which exhibit a regular pattern of receipt, their due dates are calculated based on the history of receipts. Binding notices are issued when all the expected parts of a set have been accounted for.

In addition, binding, discard,and inventory lists and statistical reports are produced by the system to aid in the management of the collection. The system produces subscription renewal notices to avoid lapsed subscriptions. Payment of invoices is controlled by an invoice information list.

A total of 85 data elements are required by the NYSL system. In comparison to the MARC serials format, it can be said that MARC is primarily a bibliographic record with some control elements while NYSL is primarily a control record with some bibliographic data.

The creation of the data base represents a substantial portion of the total system development effort. By far, the most time-consuming tasks in conversion involve the gathering and reconciling of data from dispersed and diverse manual files and the generation of control data required for claiming and binding. The availability of MARC serials records does not lessen substantially the complexities of these tasks.

The total development and operational costs reported have to be interpreted in the light of the circumstances at NYSL. The change in computing facilities is the single factor which contributed most to the cost.

Although on-line access to a serials data base was not considered feasible at the time, recent experience in the field and the development of standards may enhance the feasibility of interactive file searching and update. Short of the ideal, the experience at NYSL has shown the effectiveness of a KWIC Index to provide multiple access to the file and the practical use of Computer Output on Microfilm (COM).

Lastly, the benefits of the NYSL serials control system are in terms of the accomplishment of objectives, the experience gained by the staff, and the user reaction.

INTRODUCTION

The purposes of this report are threefold: to provide a description of the computer based serials control system at the New York State Library (NYSL), to document the rationale behind the major design decisions underlying the system, and to draw some conclusions from the experience which may provide some insights to other libraries which are embarking, or plan to embark, on similar ventures. In addition to the staff at NYSL, the intended audience includes librarians, systems analysts and administrators involved in automation activities in their libraries. The presentation is nontechnical , although an understanding of the problems of serials control in libraries and the limitations of the computer are requisite for the full appreciation of the complexities of the system. Libraries requiring more detailed documentation should contact the Director, New York State Library, Albany, New York 12224.

In organizing the contents of the report, care is taken so that each type of audience may select the parts which are most relevant to his interests. The report contains six major sections. The first section gives a brief description of the nature of the clientele and resources at NYSL, a historical perspective of computer applications at the State Library, and the rationale for selecting serials control as its first automation effort. Included in this section are discussions of the basic constraints under which the system was conceived, its scope and objectives. The second section is a description of the man/machine procedures in each module of serials processing: bibliographic control, check-in, claiming, binding and holdings update, invoice control, subscription renewals and management re-

ports. The system design and rationale are detailed in section 3. The fourth section deals with the effort in creating the data base, the definition of data elements, and their comparability with those identified in the MARC serials format. The fifth section presents the total project effort including the developmental and operational costs. The last section draws some conclusions reflecting the opinions of the system users and managers, and looks to the future. The appendixes contain relevant exhibits of conversion forms, system outputs, flow charts, a list of data elements, and record layouts.

1. BACKGROUND

1.1 The Nature of the Library

The New York State Library is one of the oldest and largest of state libraries with a collection of over 4.5 million items including books, pamphlets, maps, manuscripts, microfilm, and other materials. As a State library, it has a twofold responsibility: service to State government and statewide services to all residents of the State. The latter function is carried out through an interlibrary loan network serving other libraries, and the largest volume of requests are from other libraries within the State rather than from the walk-in patron.

The collection can be characterized as "intermediate" research; that is, it falls somewhere in the middle range between popular and esoteric materials. It is especially strong in the social sciences, law, medicine, history, and science.

The serial collection is estimated at 70,000 titles, 44,000 of which are inactive. The remaining titles are classified into two categories: government-issued serials (15,000) and nongovernment-issued (11,000). The latter defines the scope of the data base of the computerized serials system.

1.2 Historical View of Computer Applications at NYSL

The NYSL serials control system was the library's first major undertaking in computer applications. The impetus for its development can be traced back to the Governor's Library Conference in 1965. The conference was called specifically "to explore progress and problems in library development for New York State with special emphasis on the application of data

processing techniques for reference and research."[1]

Within the State Education Department, a working group of librarians, systems analysts,and programers was established which continued to exist throughout the development of this project. This unit consisted of librarians in the Computer Applications Section of the library responsible to the head of Technical Services, and of systems analysts and programers responsible to the director of the Division of Electronic Data Processing.

1.3 Why Serials?

There are various approaches to the selection of the initial computer effort in a library. There are those who believe, and rightly so, that the initial effort should be relatively low in a range of complexity to allow the staff the experience and confidence which can be applied to more difficult systems. On the other hand, the selection of the area of application may be based primarily on considerations of need; i.e., the area in library operations which presents the most serious problems. The following factors all bear on the decision:

Suitability of the task to machine operations;

The dispersion of manual files and the amount of activity against these files;

Payoff expected from automation in terms of staff,

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1 Proc. of the First Governor's Library Conference, New York, 1965.

attrition, impact on total operations, and visibility to the patron;

Adequate funding;

Availability of staff expertise in both library and machine workings;

Cumulative experience in the field;

Availability of an existing machine readable data base and relevant standards;

Cooperation with other libraries; and

Value placed on the research benefits.

At NYSL, these factors were considered. The factor which was given the highest priority was need. As in many older research collections, the manual control of serials was rapidly deteriorating. The list of inadequacies was a long and familiar one: proliferation of files which were inadequately maintained, lack of control (particularly in claiming lapsed subscriptions), subscriptions paid for but not received, inadequate identification tools, etc.

Secondly, the nature of the primary service provided by NYSL was interlibrary loan, and requests for serials constituted a significant portion of interlibrary loan. It was felt that the impact of greater efficiency and tighter control of serials processing at the library would reach beyond its immediate environment. A high value was also placed on the ability of an automated serials system to produce multiple copies of the library's holdings for wide distribution to facilitate interlibrary loan.

Thirdly, consideration was given to the relationship of the effort at NYSL to efforts in other libraries within the State. At this time, the Association of New York Libraries for Technical Services (ANALYTS) was

planning an acquisitions system, and The New York Public Library was initiating a book catalog system. Given the high investment required by automation, the avoidance of overlapping efforts was felt to be desirable.

Although there were a few serials systems at the time, most of them were listing rather than control systems. The lack of a national serials data base in machine readable form and the lack of standards were recognized as major obstacles. However, the goal was as much for an operational system which can overcome the deficiencies of the manual system as for research into the problems of computerized serials control. Due recognition was given to the fact that venturing into unchartered waters often results in learning by trial and error and, hence, increased costs. These costs can only be justified as investments which may benefit others who follow.

1.4 Scope and Limitations of the System

Having decided on the broad area of application, the next step was to define the functions to be encompassed by the system. The general approach taken was to be as comprehensive as possible within the constraints of available hardware and staff expertise. Consequently, the system was conceived to encompass all of the traditional processes associated with serials, namely:

Bibliographic control: the establishment of the bibliographic information for a title;

Check-in: the recording of daily receipts of issues and parts;

Claiming: the automatic production of notices to claim gaps in receipts and late issues;

Binding and holdings update: the automatic issuance of notices for completed sets and the update of the

record to reflect the completion of sets;

Invoice control: the recording of payment for subscriptions currently received; and

Subscription renewals: the automatic issuance of notices to renew subscriptions which are about to expire.

In addition, computerization afforded an opportunity to gather statistical data for collection management and planning purposes which manual systems cannot match. These capabilities defined the functional scope of the system.

In terms of the data base, the nongovernment-issued active serials in the collection, numbering 10,000 titles at that time, defined the limits. These were selected because they constituted a discrete data base in the manual system and because the need for better control was most urgent for this category of serials.

A constraint common to most libraries was the use of the existing computer facilities. From 1967 to 1969, the available computer was a second generation GE 235. In 1969, the facility was changed to a CDC 3300. The lack of control over computer facilities is a reality that has to be dealt with in library automation. At NYSL, it delayed the implementation schedule, but the increased computing power was used to advantage.

Given the state-of-the-art of serials automation in 1967, it was decided that the system would be a tape-oriented system with batch processing.

1.5 Objectives of the System

The overall goal of the system was to increase the utility of the library's serials holdings by providing greater control over it and by facilitating access to it. Four objectives were identified in the proposal:

To provide a tight control over the claims, subscription renewals, and binding of actively received serials;

To provide the readers service staff with significant current information, no more than 1 week old, on serials holdings in the State Library;

To provide for statewide use new printed reference tools to expedite research; and

To provide a basis for the publication of a statewide union list of serials.

2. SYSTEM DESCRIPTION: MAN/MACHINE PROCEDURES

The purpose of this section is to present an overview of the entire system of serials control currently implemented at NYSL. The system consists of both man and machine procedures. Although the descriptive approach is modular, the point of view taken is the flow of work through the system. Technical details and design considerations are presented in Section 3 System Design and Rationale.

2.1 Bibliographic Control

A title selected for acquisition is searched manually in standard bibliographic tools such as "New Serial Titles" to establish its bibliographic identity. The information is recorded on a process sheet which is used for preparing the order to the vendor and for input into the conversion form (appendix A). At this time, a permanent nine-digit number is assigned to the title. The identification number is unique to each title and is used as a sort key for alphabetizing the file by title. The conversion input sheet is edited, keypunched, and sent to the computer center to update the master file during the weekly run. The record is subjected to extensive automatic editing to check for the logical consistency of the information; e.g., a title acquired through gift and exchange should not have an invoice. A proof sheet is produced for manual editing for errors which the system cannot detect; e.g., spelling.

If no issue is received after a set period of time, a claim is produced to alert the librarian to follow up on the order. Upon receipt of the first issue, the item is checked in following the regular check-in procedures described below. Since there may be a considerable delay between

the initial creation of the machine record and the receipt of the first issue, the first proof sheet is not kept, and a second copy is requested at time of receipt of the first issue. The proof is attached to the piece and sent to cataloging. After the final bibliographic record is established, the machine record is updated for any revisions in the data and for additional data such as the call number.

Two major tools for bibliographic control are produced, both in Computer Output on Microfilm (COM). The first is the Master Information List which is intended for use by patron and staff (appendix B). In addition to cross references, the list includes all the titles currently received by the system. For each title, the identification number, call number, location in the library, and holdings are given. Retrospective and current holdings are listed by physical units, and dates of receipts are included for the latter. If a retrospective holding is an incomplete set, the holding is described in detail either in negative or positive terms, whichever is shorter. To illustrate with an example: if numbers 4-6, 8-12 of volume 8 are held, it will be listed as "V.8, no. 1-3, 7 Miss" in this case, since the negative form is shorter. On the other hand, if numbers 3-5, 8-9 of volume 8 are held, it will be listed as "V.8, no. 3-5, 8-9," since the negative form would be longer.

The KWIC (Key Word in Context) Index provides multiple subject access by each significant word in the title and by subject and nonsubject added entries and selected cross references (appendix B). The identification number of each title links the KWIC Index to the fuller information contained in the Master Information List.

2.2 Check-In

Daily receipts of serial issues are sorted in rough alphabetical order

in preparation for check-in procedures. Each issue is located in the check-in list produced weekly (appendix B). The check-in list is ordered by main entry. For each title, the frequency and location codes and the issue and date of last receipt are given. Cross references are provided to facilitate the location of the correct entry. Upon verification that the issue on hand is the same as the entry on the list, the receipt is recorded in input sheets by noting the identification number and complete identification of the issue received. The check-in input sheets are keypunched for update of the master file.

If the piece received cannot be verified in the check-in list, it is put aside for resolution and decision by a professional staff member. The problem may be due to changes in main entry which require recataloging, or it may be a need for more extensive cross references. In any case, the record is updated as required. If, however, the title does not fall within the scope of the system (e.g., it is a government issued serial), the piece is routed to the appropriate unit in the library.

On occasion, the identification pattern of the most recent issue differs from the existing identification pattern; e.g., from a date designation to an issue number. The system will reject the update, since it will accept only one identification pattern for a title at a time. The inconsistency is referred to a librarian for resolution. If it is determined that the pattern should be changed, the previous holdings are "closed" (i.e., put in retrospective holdings) and a new pattern identification is started for subsequent receipts.

2.3 Claiming

There are two general categories of claims: 1) a claim notice is produced by the system when there is a gap in a numbered series of re-

ceipts; e.g., if issues 3 and 5 are received, issue 4 is defined as a gap in receipt; 2) a claim notice is produced when an expected issue is "late." (The formulas for calculating "lateness" are defined in section 3.4.)

Claim notices are produced weekly in a form which is ready for mailing (appendix B). However, the procedures for claiming call for the manual inspection of all claim notices before they are mailed. This step is necessary to insure that the vendors are not swamped with claims in numbers that would render them ineffective. There is no provision in the update procedures to add free format notes to indicate temporary or unique circumstances such as "issue 4 is out of print," or "issue 4 is not published," etc.

Second and third notices are produced automatically for predictables only, according to a set schedule, and are handled similarly. After the third notice, the issue is automatically listed as "missing." This information is printed out in the Binding List to alert the librarian to either take the necessary steps to procure a copy or to bind the set as it is.

2.4 Binding and Holdings Update

Binding notices are issued automatically for a completed set after receipt of the first issue of the next volume. If, for example, all the issues of volume 5 are accounted for (either received or "missing"), receipt of the first issue of volume 6 triggers the production of a binding notice for volume 5. The binding notice is used as a picking slip to gather all the parts from the shelf. If the set is complete, it is sent to the bindery. If it is not complete, or if another disposition is decided upon, the record is updated to show the appropriate status. On a quarterly basis, an inventory list is printed out listing all the titles which carry the "clinic" (temporary shelves) or "does not bind" status. The inventory list serves to alert the librarian to check into these titles and make a binding dispo-

sition decision (appendix B).

Binding notices are produced automatically for new titles added to the file after a year of receipts or 12 issues, whichever comes first (appendix B). The notices are marked "first" to notify the librarian to establish control data for subsequent production of claiming and binding notices.

In addition to the binding notices, a binding list is issued weekly. This serves to ensure periodic review and adjustment of the control data for claiming and binding (appendix B).

A discard list is sent to each section in the library as notification that issues of titles superseded by bound volumes should be discarded (appendix B).

The holdings statement of a record is divided logically into two parts: retrospective holdings and current holdings. Current holdings include all the items that make up the next unit to be bound; retrospective holdings include all others. While current holdings are listed item by item, retrospective holdings are stored and printed out in summary or collapsed form; e.g., "V. 1-5." Current holdings are updated by the check-in procedures. Retrospective holdings are updated manually as a byproduct of binding procedures.

Upon return of an item from the bindery, the identification of the physical set (i.e., volume number) is added to the record. The current holdings which are replaced by the retrospective holding are automatically dropped from the machine record when a binding notice is produced.

If an item is not bound, the retrospective holdings are still updated to show the bibliographic set, rather than the physical set.

2.5 Invoice Control

On a quarterly basis, a list is produced which includes invoices received by the library and their payment status (appendix B). The list is used to verify incoming invoices as to whether or not a title is currently being received, the payment status of the latest invoice, the period covered by the invoice, and vendor information. All invoices received during the period are keypunched to update the list.

2.6 Subscription Renewal

If a record contains a date of expiration of the subscription, a renewal notice is issued near the end of the subscription period. The timing depends on the frequency of publication and whether or not a major subscription agent is involved (appendix B). The renewal notice is verified manually and sent to the vendor.

2.7 Management Statistics

The computerization of serials operations provides the opportunity to record statistics in the kind of detail and flexibility not available in manual systems. Two types of statistical reports are produced, providing data for management planning and data for system refinement:

1. Production statistics are automatically generated weekly, monthly, and annually from the master file (appendix B). Counts of transactions processed, claims produced, etc. are printed for the week, year-to-date, and the same week last year for comparison purposes.
2. Master file statistics can be generated "on demand" for specific combinations of data (appendix B). For example, all statistics on the number of serials without any pattern of publication which also fall into the category of "does not bind" can be printed. Such information as data element lengths and frequency of occurrence are shown to aid in system refinement.

2.8 Summary

The preceding section presented the man/machine procedures involved in the processing of serials at NYSL. It included procedures for bibliographic control, check-in, claiming, binding and holdings update, subscription renewal, invoice control, and the generation of management reports. Table 1 summarizes the outputs of the system including a brief description of the function of each output and a reference to the appropriate exhibit in the appendix.

TABLE 1

List of outputs, frequency, and function

Appendix B Exhibit Number	Name	Frequency	Function
1	Master Information List	Weekly supplements cumulated every 9 weeks	Provides basic information about serials currently received and about current and retrospective holdings
2	KWIC Index	Annual	Provides access by key words in the title or main entry, subject and nonsubject added entries, selected cross references for title identification
3	Check-in List	Weekly	Recording of daily receipts
4	Claim Notice	Weekly	Provides claims for gaps in receipts and late issues
5	Binding Notice	Weekly	Provides picking slips for completed sets
6	Binding Check List	Weekly	Provides for periodic review and revision of claiming and binding control data
7	Discard List	Quarterly	Notifies librarians of superseded issues to be discarded
8	Inventory List	Quarterly	Alerts librarian to check into items in temporary status awaiting binding disposition
9	Invoice Information List	Quarterly	Serves as verification that invoices received are for currently received titles and have not been paid previously.

TABLE 1-continued

List of outputs, frequency, and function

Appendix B Exhibit Number	Name	Frequency	Function
10	Invoice Renewal Notice	Weekly	Notification to vendor that an invoice for a subscription that is about to expire has not been received.
11	Statistical Report	Weekly, cumulated monthly and annually	Reports statistics for management use in planning and budgeting.

3. SYSTEM DESIGN AND RATIONALE

3.1 Control and Sequencing of Titles

One of the first major design decisions was to sequence the master file by main entry. Since sorting by main entry was judged to be time consuming, a nine-digit identification number was devised to serve as a sort key. To avoid renumbering the file as it grew, a study was made to determine the alphabetic distribution of the entries and the available numbers were distributed proportionately. Although it was technically feasible for the system to assign identification numbers based on this distribution, such a capability called for the allocation of programing resources which were, at that time, more urgently needed elsewhere. Consequently, it was decided to assign the identification number manually. The manual assignment of identification numbers required additional staff training, but was successfully merged with the conversion procedures.

3.2 Initial Record Conversion

A new title is added to the machine file after it is ordered. The trade-off involved in this decision is earlier control over a new title versus update requirements after cataloging. There are several advantages gained by establishing a record in the machine file at the point of order. In terms of the library patron, it signifies that he can expect the library to hold the title in the near future. This is particularly significant in view of the delay between the time when a title is ordered and when it is cataloged. For the library staff, it aids in the avoidance of an unintended duplication of order. Furthermore, the entry of the new title in the file permits the system to initiate claims in accordance to a set schedule. On the other hand, since the title is entered into the file before the final

bibliographic record is established in cataloging, update requirements are increased. Extra care in preorder verification searching reduces modification, but there are data elements, such as the call number, which are not established until after cataloging.

3.3 Check-In

Consideration was given to four approaches for recording the daily receipts of serials:

on-line input

pre-punched cards

mark-sense forms

printed lists.

On-line update was considered ideal, but at the time the system was designed, little experience had been gained in the field about the problems of on-line access to serials files. The only on-line serials system at the time was at Laval University where the access problem was surmounted by requiring an initial step of looking up an identification number in a printout.[2] It was decided that this approach negated the advantages of interactive file searching and was not really a solution.

Prepunched cards were considered in the light of the experience gained at the University of California at San Diego.[3] The logic behind the prepunched card method calls for the system to produce cards for the entire file or its subset, containing information, usually the title and the issue

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[2]De Varennes, R. "On-line serials system at Laval University Library." J. of Library Automation. 3:2 (June 1970), 128-141.

[3]Bousseau, D. "The University of California at San Diego Serials System - A case history." Paper presented at the University of Oregon Workshop on Library Mechanization, 1968.

identification,adequate for identifying a receipt. The receipt is noted by pulling the appropriate card. If the issue identification on the card is not the same as the one received or,in the case of an unpredictable, is blank, manual keypunching is required. The major obstacle in implementing this method is the lack of space in a card for all of the information required to identify a title and issue expected.

The mark sense technique was seriously considered because equipment was available on site. This technique required the operator to mark the appropriate box in a precoded sheet. In an experiment to determine the feasibility of the mark sense technique for check-in, it was found that marking input sheets was difficult to perform over extended periods and that efficiency dropped sharply. The complexity of marking the issue identification rendered this approach ineffective.

A printed check-in list which contained all the required information for positive identification of a title avoided the problems of space limitation in the prepunched card approach and the complexity of issue identification in the mark sense approach. Further, generous cross referencing rendered easy access to a title,and has some of the advantages of on-line access.

The check-in list includes all the titles in the system. It includes, in addition to information for identifying the title, the expected issue when it is predictable, or the previously received issue when it is not possible to predict the expected issue. The list is used only for identification purposes. Due to the handling and timing problems, the receipt information (identification number and issue received) are entered on input sheets which are then used for keypunching and file update.

3.4 Claiming

The heart of a serials control system is claiming. Claiming can logically be divided into two aspects: 1) claiming the right thing and 2) claiming at the right time. These aspects are related, but the problems involved with each must be clearly delineated.

3.41 Claiming for gaps in receipts

In general, there are two types of claims: claims for gaps in receipts and claims for late issues. A gap in receipt can only be recognized if there is a sequence; i.e.,if one can assume that the issues are identified and published sequentially. The receipt of issues 4 and 6 indicates that issue 5 should have been received. However, the receipt of the January and March issues does not necessarily indicate a gap unless it is specified that the frequency of publication is monthly and, further, that 12 issues are expected in a year. Claiming for gaps, therefore, requires that there be a sequence of publication and that the frequency of publication is known. The sequence and frequency of publication provides the control elements for predicting what should be claimed. The receipt of an issue out of sequence is the basis for determining that a gap exists ;i.e.,when to claim.

Claiming for gaps in receipts, while relatively simple, is not always clear-cut. An issue may be received out of sequence for various reasons. It is, therefore, necessary to take the precaution to manually verify automatically produced claims.

3.42 Claims for late issues

The second type of claim is the claim for late issues. In a manual claiming procedure, what constitutes a late issue is subjectively determined, often based on past experience. If a computer-based system is to produce claim notices for late issues, the rules for defining lateness

must be spelled out. Logically, whether an issue is late or not depends upon when it is expected. If an issue has not arrived after it is "due," it is, by definition, late. In this sense, claiming is not unlike a circulation system in its issuance of overdue notices. However, in a circulation system, loan periods are set by the library and do not vary as widely as serial receipts.

3.421 Claims for unpredictable titles

There are two approaches in setting an expected arrival date for a serial. The first approach is to set a schedule based on the serial's frequency of publication. Since the claiming schedule is geared towards the frequency of publication of a serial, this approach is not as finely tuned as one which is geared towards the receipt pattern of a particular title. At NYSL, the schedule approach to claiming is used for a category of serials called "unpredictables." Unpredictables are these serials which may or may not have a stated frequency of publication or which do not exhibit a regular pattern of receipt; i.e., the period between two receipts varies widely. The claiming schedule for unpredictables is shown in table 2.

For the category of serials called "unpredictables," the expected date of arrival or "due date" is calculated as:

due date of unpredictable serial =
date of last receipt
+ number of elapsed days allowed
from date of last receipt.

e.g., if the date of last receipt is January 2 and the number of elapsed days is 28 for a weekly publication, the date due is January 30. An unpredictable serial is late when today's date equals or exceeds the expected date of arrival.

TABLE 2

Claiming Schedule for Unpredictable Serials

Frequency of publication	Number of elapsed days allowed from date of last receipt
Weekly	28 days
Biweekly	28 days
Semimonthly	28 days
Monthly	56 days
Bimonthly	84 days
Quarterly	112 days
Triannual	168 days
Semiannual	252 days
Annual	455 days
Without Pattern	112 days

A new title added to the file is automatically handled as an unpredictable until it appears on the Binding List, which occurs 1 year after it is entered into the file, or after 12 receipts, whichever comes first. A title's appearance in the Binding List triggers, among other things, the manual classification of the title as predictable or unpredictable, based on its history of receipt. Subsequent claiming for these titles is based on the control information established at this time.

3.422 Claims for predictable titles

A serial title is classified as predictable if 1) it has a stated frequency of publication, 2) it is issued in sequence, and 3) it is received at NYSL at regular intervals.

The logic of claiming an unpredictable serial; i.e., a serial is claimed when today's date equals or exceeds the expected arrival date. However, the difference between the two lies in the fact that the due date of a predictable serial is calculated specifically for each title rather than for the classes of titles based on their frequency of publication. The due date of a **predictable** serial is calculated as:

due date of predictable serial=
publication date on piece
\+ lag factor.

E.g., if the publication date on the piece is January 2 and the lag factor is 45 days, the due date is February 15. The lag factor is the average number of elapsed days between the two receipts. It is calculated as:

$$\text{lag factor} = \frac{\text{dates of receipt - publication date on piece}}{\text{number of receipts}}$$

Example:

date of receipt at NYSL	publication date	lag
January 10, 1972	January 1, 1972	9
April 5, 1972	April 1, 1972	4
July 12, 1972	July 1, 1972	11
October 1, 1972	October 1, 1972	0

$4\overline{)24}$

6 lag factor

The calculations to establish claiming control are initially made when a title first appears in the Binding List. The control data are recalculated by the computer, reviewed, and adjusted by the staff when necessary at each subsequent appearance of the title on the list.

3.43 Claiming Cycle

The date of the issuance of the first claim is automatically adjusted by a fixed number of days, depending upon whether it is a domestic or foreign serial and its frequency of publication. Second and third claims are issued automatically for predictables only according to a set schedule. (See table 3) After the third claim, the issue is listed as "missing" in the Binding List. The "missing" status of an issue serves to remove it from consideration in determining binding readiness. This means that a binding notice is produced for the volume, even if one or more of its issues may be missing.

3.5 Holdings Statement Format and Update

Several considerations enter into the determination of the manner in which holdings statements are formatted and updated: storage requirements, display requirements, ease of update, and the characteristics of holdings data. A casual inspection of serials quickly reveals the numerous ways in which issues are identified; e.g., volume-issue number, month-year, season-year, etc. Not only does the variety of issue identification contribute to the complexity of formatting holdings, but more importantly, in most cases, each issue is identified in two parts, each part following its own sequence; e.g., the volume number may be 8 and the issue number is 4. The unique identification of the piece consists of both volume and issue numbers. Furthermore, it is the characteristic of serial holdings that the issue numbering cycle determines the volume number. For example, if a

TABLE 3

Claiming Cycle for Predictable Titles

Type of Serial	Frequency of Publication	Claim Number	Elapsed Days
Domestic	more frequently than monthly	1	2 weeks after date due
		2	5 weeks after claim 1
		3	5 weeks after claim 2
		missing	5 weeks after claim 3
Domestic and Foreign	monthly or less frequently monthly or more frequently	1	4 weeks after date due
		2	5 weeks after claim 1
		3	5 weeks after claim 2
		missing	5 weeks after claim 3
Foreign	more frequently than monthly	1	7 weeks after date due
		2	5 weeks after claim 1
		3	5 weeks after claim 2
		missing	5 weeks after claim 3

volume consists of 12 issues, the issue numbering reverts to 1 after the 12th issue, and the volume numbering is incremented by 1.

Another characteristic of serials holdings is the fact that the current holdings are more volatile than the older holdings since check-in, claiming, and binding procedures are performed on the current holdings. Based on the volatility of data, two types of holdings can be differentiated: retrospective holdings briefly defined as completed sets and current holdings or incomplete sets.

The first decision regarding holdings statement format was to summarize retrospective holdings, (e.g., V. 1-5,) and to detail current holdings.

The second decision made was to express gaps in holdings in either negative and positive forms, depending upon which way was more compact. For example, if volume 8 has number 3 missing, the holdings statement would be formatted as "vol. 8, no. 3 Miss." This decision was made to save storage and display space without hardship on the user of the system product.

The third decision related to holdings statements was to manually transform current holdings into retrospective holdings upon the completion of a set. This procedure, generally called holdings update in most libraries, cannot always be equated with the binding of a set since not all sets are bound, either because of policy or because of missing issues. Some sets cannot be completed, even after efforts to replace missing issues. Furthermore, some sets are incomplete as issued; i.e., the publisher did not issue a number.

3.6 Summary

The preceding section discussed the rationale underlying the major design decisions in the bibliographic control- check-in, claiming and holdings update of serials. System flow charts are presented in appendix C.

The ultimate goal of systems design is to arrive at the optimum utilization of machine and human resources. The realities of the limitations of these resources make it necessary at times to settle for less than the ideal. The design decisions made at NYSL may not be appropriate for another system with a different environment. The discussion of the rationale behind these decisions provides a framework upon which others can build.

4. CREATION OF THE DATA BASE

4.1 Identification of Data Elements

The logic of identifying the necessary input required working backwards; i.e., by identifying the information in desired outputs and by identifying the data required for processing. In general, three types of data were required: bibliographic, holdings, and control. The bibliographic data were gathered from the public files and coincided with the cataloging record, except for the elimination of some descriptive notes. Current holdings were obtained from the check-in records, and retrospective holdings were based on the shelflist records. In cases of conflict in the records, the shelves were checked. Control data for claiming and binding were based mostly on the check-in and binding records. In addition, data which were not systematically recorded in the manual files were provided. At times, the conversion of a single record required the consultation of as many as eight sources. (See Table 4.)

4.2 File Format

There are two master files (see appendix E for file layouts):

1) fixed master file

2) variable master file.

Both are tape files with fixed-length records.

The fixed master file has 3,840 characters per record and one record per block. There is one, and only one, record for each serial. The record consists mainly of bibliographic and control information.

The variable master file has 156 characters per record and 16 records per block. There may be many records for each serial or none. There are four record types, each repeatable a various number of times:

1) Current holdings may be repeated up to 205 times;

2) Retrospective holdings have no limits in the number of times a field is repeated;

3) Invoice records may be repeated up to 9 times; and

4) Cross references have no limits in the number of times repeated.

TABLE 4

Sources Consulted for Record Conversion

Source	Type of Information		
	Bibliographic	Holdings	Control
Physical Issues		X	X
Check-in record		X	X
Binding record			X
Shelflist	X	X	
Public catalog	X		
Serials catalog	X		
MARC Language code manual			X
Coder manual			X

GENERAL DATA FIELDS

1. Bibliographic Information includes main entry, title, publisher, place of publication, Dewey decimal number, LC card number, call number, cross references,and bibliographic notes.
2. Holdings Data includes publication start date, retrospective holdings,and current holdings.
3. Control Data includes identification work title number, publication status code, type of acquisitions location code, language indicator, frequency, lag factor, agent code, and publisher/supplier.

4.3 Comparability with MARC

The MARC serials format was published in 1969 when the conversion effort at NYSL was well under way. There was no attempt to change the data elements in the system to conform to MARC. There was, however, a study done to compare the two sets of data elements.[4] Appendix F6 has a summary of the comparison between the MARC and NYSL data elements. It should be emphasized that the comparison refers to the correspondence of data elements rather than their equivalence.

The major difference between the two is the fact that MARC is primarily a bibliographic record which includes some control data while NYSL is primarily a control record which includes bibliographic data. It follows, therefore, that MARC tends to be more detailed and inclusive in bibliographic data while NYSL requires greater depth in control data and a larger number of data elements not in MARC. Appendix F shows the data elements unique to each system.

4.4 Conversion Problems

Upon the completion of the systems design in 1967, conversion of 400 records was initiated to provide the test data for the pilot system. As was expected, the pilot run quickly brought out the "bugs." Changes were made which required the addition of data elements to the existing records. As the staff gained experience, conversion procedures were streamlined. However, before full production could be reached, the new computer facility

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[4] Detailed study available upon request.

was installed which required major programing. Parallel manual and automated processing was discontinued in 1969 with approximately half the data base in machine readable form. The conversion was completed in 1971. Figure 1 on page 44 shows the production schedule of record conversion and the history of the entire system development effort.

The conversion of 10,000 serial records required a total of 41.5 man years of effort. While it can be said that the circumstances surrounding the conversion effort at NYSL were unique, it should be pointed out the creation of the data base for a serials control system represents a significant portion of the total costs of system development. Section 5, which follows, details the costs. (For a discussion of the effect of the availability of MARC serials records on data base building, see conclusions in section 6.)

One of the most time-consuming tasks in the creation of the data base was the gathering of the required data from numerous manual files, some of which contained inconsistent information, making it necessary to verify the data by visual inspection of the holdings. T e extent of this problem is related to the amount of dispersion of the data in the library's files. It was pointed out earlier that, to convert a single record, as many as eight sources might have to be consulted.

By far, the most complex operation in conversion was the process of making explicit the control information which was implicit in the manual records or must be generated. The reader is referred to section 3.4 which describes the details of determining the lag time for predicting the arrivals of issues as an example of the complexity of the task.

Another source of complexity was the interrelatedness of the data elements; e.g., a paid subscription should have an invoice number. The com-

puter edit procedures checked for the logical consistency of data elements so well that, before the staff had gained sufficient experience, the rejection of input records became a source of frustration for the staff. The point to be made here is that adequate measures to ensure "clean" data contribute to the enormity of the task.

Because of the amount of time which elapsed between the initiation of the conversion and its completion, both manual and machine files were updated. Parallel systems were costly and required the hiring of additional staff. Under the best of circumstances, even assuming that personnel familiar with serials processing could be found, a great deal of training was required to familiarize them with the library's procedures. The integration of new and old staff members and the coordination of the effort was not a small task.

5. DEVELOPMENTAL AND OPERATIONAL COSTS

The cost figures reported in table 5 in terms of man-months and computer time should not be taken as typical of serials automation costs. They should be taken in light of the circumstances at NYSL. At that time, 1967-68, the NYSL took on the task, both as a research project and as an approach to solving a serious operating problem in the library. The ambitious nature of the project (e.g., sometimes the research and practical interest were incompatible), combined with the computer technology and staff available at the time, put a severe strain on the development schedule and easily outran the capacity of the computer facility. The reprograming and extension of the original computer system on the upgraded computer facility certainly increased developmental costs and delayed implementation schedule, but in retrospect, it also permitted the system to survive. The full-blown system was powerful enough to meet the library needs and actually cost less to operate than the previous partial system.

The conversion to the CDC computer was responsible for some redundancy of effort, but certainly no more than 25 percent. There was much trial and error in the system development and the reprograming for the new computer came at an opportune time to take advantage of many desirable system modifications.

In concrete terms, the full system on the new CDC 3300 runs approximately 5.5 hours a week. This is contrasted with the old GE 235 system which, when only 70 percent complete, took more than 24 hours per week to process only 75 percent of the data base.

Figure 1 summarizes the entire developmental effort that went into analysis, design, and programing of the NYSL serials control system.

TABLE 5

Developmental and Operational Costs

I. Developmental Costs

Computer Time (in hours)

	1966	1967	1968	1969	1970	Total
GE 235		50	285	936		1,271
CDC 3300					600	600
Total		50	285	936	600	1,871

EDP Personnel (in man-months)

	1966	1967	1968	1969	1970	Total
Analysis and Design	5	17	15	14	8	59
Programing		26	26	28	16	102
Keypunching		3	18	24	24	69
Total	5	46	59	66	48	230

Library Personnel (in man-months)

	1966	1967	1968	1969	1970	Total
Professional	6	12	24	24	24	90
Clerical		120	132	120	36	408
Total	6	132	156	144	60	498

II. Operational Costs (EDP) -- 1971 on

Computer Time 5.5 hours/week
286 hours/year

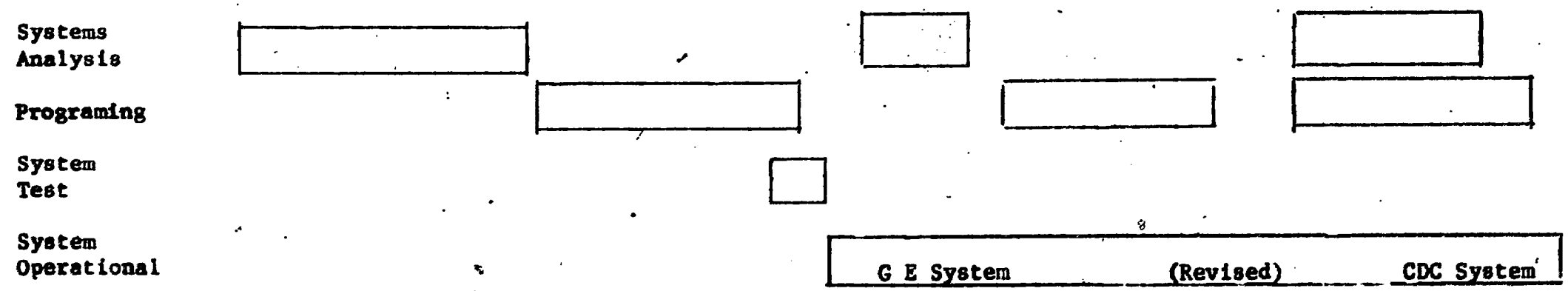
System Maintenance 6 man-months/year

FIGURE 1

NEW YORK STATE LIBRARY SERIALS

Control System Development

Schedule



6. CONCLUSIONS

The experience of creating a data base for a serials control system at NYSL points to a number of considerations: first, that the conversion of records to machine readable form is a substantial portion of the total system development effort; second, that the most time consuming and costly aspects of conversion are the process of gathering and reconciling the needed input from the diverse and dispersed manual files and the process of generating control information for claiming and binding. In comparison to holdings and control data, bibliographic data present few problems. These aspects of conversion are either ignored or are not given sufficient attention in cost reporting in the literature.

One of the major developments related to serials automation in libraries is the distribution of machine readable records from the MARC Development Office of the Library of Congress. It should be emphasized, however, that the MARC serials record is primarily a bibliographic record. To use the MARC records for a basis for building a serials control data base would require the matching of the MARC records with the library's records and, more importantly, would not lessen the work involved in gathering and reconciling holdings data or in generating control data.[5]

Another significant development in the field is the assignment of the International Standard Serials Number (ISSN) which uniquely identifies a serial title. The ISSN can facilitate serials processing in libraries if it is widely accepted and used. It would facilitate communication with serials

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[5] See appendix F which lists the data elements in NYSL which are not provided in MARC.

vendors in subscription and invoice control, aid the library user in identifying a title if the number is incorporated in bibliographies and indexes, and facilitate access to library files, particularly for check-in, if the number appears on the piece. Potentially, the ISSN can become the most important tool in serials handling and has great impact on serials automation.

Serials control is primarily a file update function. The experiences at NYSL and elsewhere show the shortcomings of batch update of files. One of the major obstacles to developing an on-line serials control system is the complexity of accessing a serials file. Serial titles differ from monographic files deficient for serials. Some of the characteristics of serial titles which have to be considered are the number of common words in titles such as journal, bulletin, etc. and the significance of the order of words in the title. The problem of access is not an insurmountable one as evidenced in the serials control system at the UCLA Biomedical Library.[6] The appearance of the ISSN on serial issues would enhance the feasibility of on-line serials control in libraries.

If this report has served to impress on the reader the complexities of developing a serials control system, it has only succeeded in part, for the other part consists of the benefits derived from the experience. Some of these benefits are quite tangible; others are not.

In the first place, the objectives set forth for the system have been and are being accomplished. The automated system has provided tighter controls over serials processing, particularly in claiming, payment, and subcription renewals. It has provided the in-house users with current inform-

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6 Fayollat, James. In "On Line Serials Control in a Large Biomedical Library," Journal of American Society for Information Science. 24:2 (March-April 1973), 80-86.

ation on serials and the remote users with reference tools to expedite interlibrary loans.

All of the system outputs are being utilized in various phases of serials control. Some of these outputs are still not being utilized to the fullest, such as the inventory list, but the potential is there, and the staff is being trained to take advantage of these controls. In terms of system outputs, two are singled out for special mention because of their impact on the users. These are the Master Information List and the KWIC Index. Short of on-line access to the file, the KWIC Index has provided an effective compromise. It permits access by any key word in the title, as well as subject, nonsubject added entries, and selected cross references. Both of these products are in microfilm produced by the computer (COM). Even with the cost of the readers ($6,000 purchase price for 12 sets), the cost of providing copies of these products in COM is much less than printed copies.

The other system output of special note is the management report. The report serves a twofold purpose: it aids management in planning and budgeting, and it aids system designers in monitoring the system. It would also be useful for other libraries who are designing similar systems.

In spite of the problems encountered, the serials system has been in operation without interruption since April 1968. Perhaps a clearer sign of its successful incorporation into the daily operations is the retirement of the manual files, particularly the check-in file.

A less tangible, but nevertheless significant, accomplishment is staff training. Staff attitude at the beginning of the effort can, at best, be described as skeptical. There are still improvements that can be made, but the experience with the serials control system has proven that man and ma-

chine can work together for man's benefit. The gain in expertise and especially the gain in positive attitude towards computerization is an investment towards the future.

APPENDIX A

CONVERSION FORMS

Conversion Forms

ID # | | | | | | | | | |

FIELD # | 0 | 0 | 1 |

SERIES NO. | PUBLISHING START DATA VOL. NO. | ISSUE NO. | ISSUE NO. | S/P | PUBLISHING DATE MO. DAY YEAR

EARLIEST HOLDING: DATA

ATTACH COPY OF:

1. L.C. CARD
   or
2. N.Y.S.L. CARD
   or
3. NEWLY CREATED X CARD

FIELD NO. | 0 | 1 | 1 |

30 35

WORK TITLE

FIELD NO. | 0 | 1 | 2 |

WORK TITLE

FIELD NO. 001 MAIN ENTRY* PUBLISHING STATUS CODE* TYPE OF ACQUISITION* LOCATION CODE*

DOCUMENT IDENT.* LANG. IND.* LANGUAGE #1* LANGUAGE #2* FREQUENCY* LAG FACTOR*

	ISSUE	EXCEPTION	S/P		ISSUE	EXCEPTION	S/P
1.				2.			
3.				4.			
5.				6.			

W.Y.S.U.L. ID NO.

FIELD NO. 031 AGENT CODE*

PUBLISHER/SUPPLIER NAME*

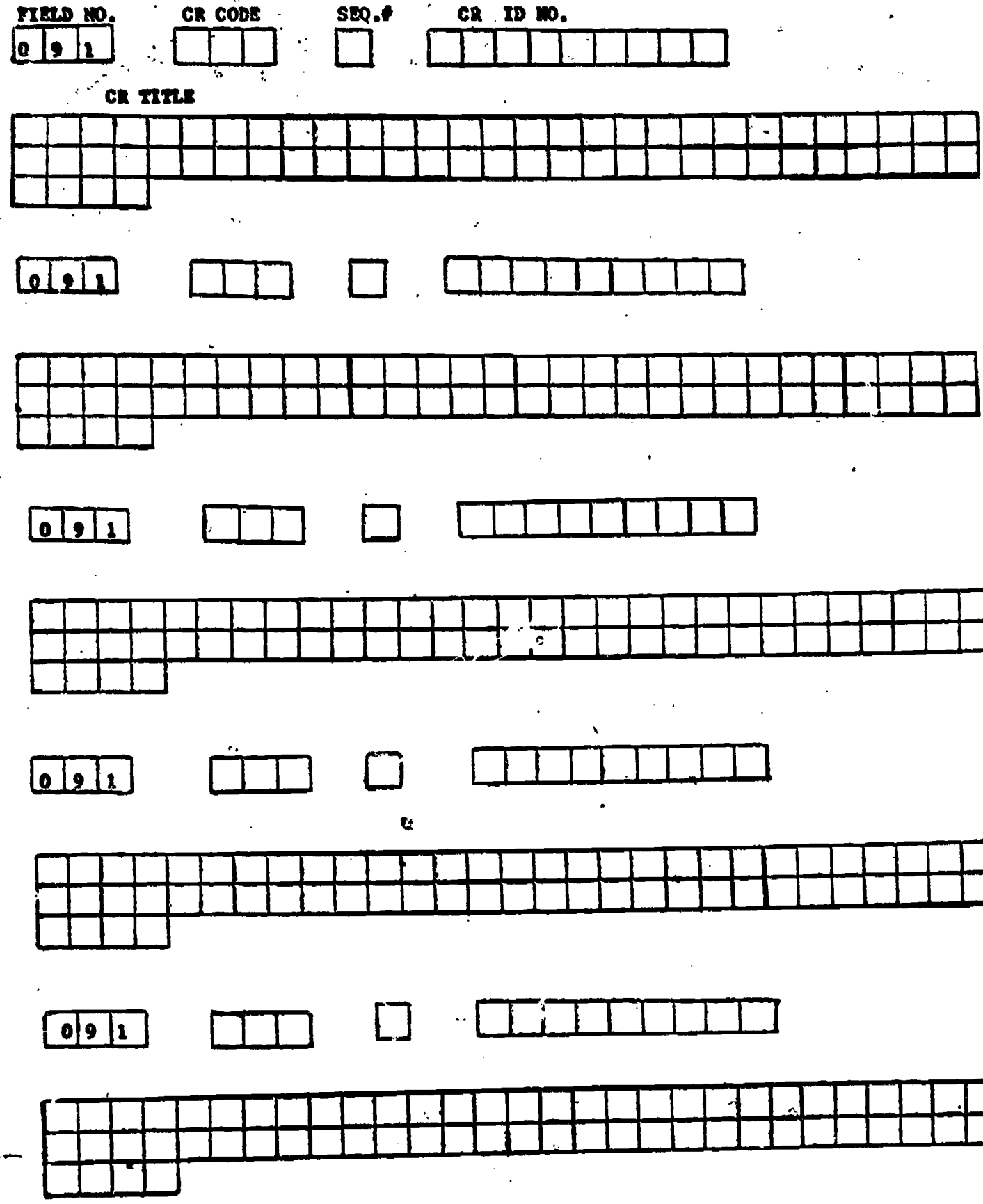
FIELD NO. 032

STREET

CITY & STATE*

ZIP CODE

CROSS REFERENCES



INVOICES

Field No. 0 8 1 | Type Code | Invoice No. | Amount . | Authorization Date Mo. Day Year

Beginning Mo. Yr. | Vol. No. | Issue No. | Issue No. | S/P or T-C-I

Ending Mo. Yr. | Vol. No. | Issue No. | Issue No.

Field No. 0 8 2 | Type Code | Invoice No. | Amount . | Authorization Date Mo. Day Year

Beginning Mo. Yr. | Vol. No. | Issue No. | Issue No. | S/P or T-C-I

Ending Mo. Yr. | Vol. No. | Issue No. | Issue No.

Field No. 0 8 3 | Type Code | Invoice No. | Amount . | Authorization Mo. Day Year

Beginning Mo. Yr. | Vol. No. | Issue No. | Issue No. | S/P or T-C-I

Ending Mo. Yr. | Vol. No. | Issue No. | Issue No.

Field No. 041

5.

VOLUME NUMBERING CYCLE
0-NO VOLUME NUMBERING CYCLE
1-CONTINUOUS
2-REPEATS AFTER VOLUMES

* ☐

VOLUME NUMBERING CYCLE	IF CONTINUOUS, THIS = 00	* ☐☐
VOLUME NUMBERING CYCLE COUNTER	IF CONTINUOUS, THIS = 00	* ☐☐
ISSUES/VOLUME	IF VOL. NO. CYCLE CODE IS ZERO, THIS MUST ALSO BE ZERO; IF NON-ZERO, THIS MUST ALSO BE NON-ZERO.	* ☐☐☐
ISSUES/VOLUME COUNTER		* ☐☐☐

ISSUE NUMBERING CYCLE CODE ☐
0-NO ISSUE NUMBERING CYCLE
1-CONTINUOUS
2-REPEATS AFTER ? NUMBER OF ISSUES
3-REPEATS AFTER ? NUMBER OF VOLUMES
4-REPEATS AFTER ? NUMBER OF YEARS

ACTUAL NUMBER OF ISSUES, VOLUMES OR YEARS BEFORE REPEATING	IF CONTINUOUS, THIS = 000	* ☐☐☐
ISSUES NUMBERING CYCLE COUNTER	" " " "	* ☐☐☐

SUPPLEMENT CODE (0) NO SUP. (1) ISSUES (2) VOLUMES * ☐

BINDING DATA

* ☐

0 - DOES NOT BIND
1 - BINDS BY VOLUME(S)
2 - KEEP LATEST VOLUME(S) ONLY
3 - VOLUMES RECEIVED BOUND

* ☐☐☐

NUMBER OF BIBLIOGRAPHIC VOLUMES BOUND TOGETHER

0 - UNKNOWN/IGNORE
1 - NONE PUBLISHED
2 - IN AN ISSUE
3 - RECEIVED SEPARATELY W/O REQUEST
4 - RECEIVED ON REQUEST
5 - PURCHASED SEPARATELY
6 - RECEIVED IN LAST ISSUE
7 - RECEIVED IN FIRST ISSUE

TITLE PAGE * ☐
TABLE OF CONTENTS * ☐
INDEX * ☐

CLAIM CODE

1. DOMESTIC * ☐
2. FOREIGN * ☐

FUND TYPE (see table) * ☐☐☐☐☐☐

ORDER DATE ☐☐☐☐☐☐
ASTM CODE

FIELD NO.
0 6 1

RETROSPECTIVE HOLDINGS

ENTRY YEAR   SEQ. NO.   FUNC. CODE   SER. NO.   VOLUME NO.   PUBLISHING YEAR

ISSUE DATE

ENTRY YEAR   SEQ. NO.   FUNC. CODE   SER. NO.   VOLUME NO.   PUBLISHING YEAR

ISSUE DATE

ENTRY YEAR   SEQ. NO.   FUNC. CODE   SER. NO.   VOLUME NO.   PUBLISHING YEAR

ISSUE DATE

ENTRY Y   SEQ. NO.   FUNC. CODE   SER. NO.   VOLUME NO.   PUBLISHING YEAR

ISSUE DATE

ENTRY YEAR   SEQ. NO.   FUNC. CODE   SER. NO.   VOLUME NO.   PUBLISHING YEAR

ISSUE DATE

ENTRY YEAR   SEQ. NO.   FUNC. CODE   SER. NO.   VOLUME NO.   PUBLISHING YEAR

ISSUE DATE

ENTRY YEAR   SEQ. NO.   FUNC. CODE   SER. NO.   VOLUME NO.   PUBLISHING YEAR

ISSUE DATE

9/1/69

CURRENT HOLDINGS

FIELD NO.

0	5	1

SER. NO.	VOLUME NO.	ISSUE NO.	ISSUE NO.	S/P	PUB. DATE	PUB. DATE	TYPE CODE

APPENDIX B

SYSTEMS OUTPUTS

Master Information List

KWIC Index

Check-In List

Claim Notice

Binding Notice

Binding Check List

Discard List

Inventory List

Invoice Information List

Invoice Renewal Notice

Statistical Report

DANSKE VIDENSKABERNES SELSKAB, COPENHAGEN. HIST-FILOSOF MEDDELELSER.

NYSL CALL= - 069 D19M

254-680-121 GIFT PLACE OF PUB.- KOBENHAVN.

HOLDINGS-	VOL	ISSUE	S/P	DATE
CURRENT-	45	1		010170
	44	4		120169
	44	3		100169

RETRO.- SER	VOL	PUB. YEAR	ISSUE DATA
	0019-0043	1932-1964	

LOC.- FP 1 VOL. BOUND TOGETHER
PUB. START-STOP / /1917 -

STATUS	VOL	ISSUE	S/P	DATE
RECD-03/31/71	44	2		120169
RECD-03/20/70	44	1		090169
RECD-03/20/70				

FUNCTION	SEQ
BOUND	1

WITHOUT PATTERN STATUS
RECD-03/20/70
RECD-08/29/69

ZEITSCHRIFT FUER NEUROLOGIE.

262-956-125 PAID PLACE OF PUB.- LEIPZIG,

HOLDINGS-	VOL	ISSUE	S/P	DATE
CURRENT-	199	3		300971
	198	3		120070

RETRO.- SER	VOL	PUB. YEAR	ISSUE DATA
	0001-0193	1891-1969	
	0194-0195	1968-1969	
	0196-0197	1969-1970	

LOC.- MD 2 VOL. BOUN. TOGETHER
PUB. START-STOP 04/30/1891 -

STATUS	VOL	ISSUE	S/P	DATE
RECD-07/20/71	198	2		110170
RECD-02/16/71	198	1		090170

FUNCTION	SEQ
BOUND	1
BOUND	1
BOUND	1

WITHOUT PATTERN STATUS
RECD-12/22/70
RECD-12/08/70

DEUTSCHE ZEITSCHRIFT FUER NERVENHEILKUNDE.
262-956-125 SEE- ZEITSCHRIFT FUER NEUROLOGIE.

262-956-125

DEVELOPMENTAL BIOLOGY. SUPPLEMENT.

264-099-671 PAID PLACE OF PUB.- NEW YORK.

HOLDINGS-	VOL	ISSUE	S/P	DATE
CURRENT-	1968	2		010168

RETRO.- SER	VOL	PUB. YEAR	ISSUE DATA
	0001	1967	

LOC.- CA DOES NOT BIND
PUB. START-STOP / /1967 -

STATUS	FUNCTION	SEQ
RECD-06/09/70	BOUND	1

WITHOUT PATTERN

DIESEL AND GAS TURBINE PROGRESS.

NYSL CALL= - 621.436 QD563PR

264-962-429 PAID PLACE OF PUB.- NEW YORK.

HOLDINGS-	VOL	ISSUE	S/P	DATE
CURRENT-	37	8		080171
	37	7		070171
	37	6		060171
	37	5		050171
	37	4		040171
	37	3		030171
	37	2		020171
	37	1		010171
	36	12		120170
	36	11		110170

RETRO.- SER	VOL	PUB. YEAR	ISSUE DATA
		1936-1937	V.2 NO.11,V.3 NO.1-3
	0006-0007	1940-1941	
		1942	V.5 NO.11 MISS.
	0009	1943	
		1944	V.10 NO.2-5,7-12
	0011-0035	1945-1969	
		1968	V.34 NO.2-12

LOC.- CP DOES NOT BIND
PUB. START-STOP / /1935 -

STATUS	VOL	ISSUE	S/P	DATE
RECD-08/17/71	36	10		100170
RECD-07/13/71	36	9		090170
RECD-06/22/71	36	8		080170
RECD-05/18/71	36	7		070170
RECD-04/13/71	36	6		060170
RECD-03/23/71	36	5		050170
RECD-02/16/71	36	4		040170
RECD-01/19/71	36	3		030170
RECD-12/15/70	36	2		020170
RECD-11/24/70	36	1		010170

FUNCTION	SEQ
STRAWBOARD	1
BOUND	1
STRAWBOARD	1
BOUND	1
STRAWBOARD	1
BOUND	1
UNBOUND	1

MONTHLY-P STATUS
RECD-10/20/70
RECD-09/22/70
RECD-08/18/70
MISS-11/24/70
RECD-06/16/70
RECD-05/15/70
RECD-05/01/70
RECD-04/03/70
RECD-04/03/70
RECD-04/03/70

DOMESTIC ENGINEERING.

NYSL CALL= - 696.05 QD668

268-599-955 PAID PLACE OF PUB.- CHICAGO.

HOLDINGS-	VOL	ISSUE	S/P	DATE
CURRENT-	218	2		080171

LOC.- FP 1 VOL. BOUND TOGETHER
PUB. START-STOP / /1889 -

STATUS	VOL	ISSUE	S/P	DATE
LATE-08/24/71	217	4		040171

MONTHLY-P STATUS
CLM3-08/03/71

	ANNALS OF THORACIC SURGERY.'	T	097-566-116	MD
	ANNALS OF TROPICAL MEDICINE AND PARASITOLOGY.'	T	097-623-985	MD
D SOCIAL SCIENCES.*	ANNALS. (1).' AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCES.*	MT	017-990-111	PR
D SOCIAL SCIENCES.*	ANNALS. (2).' AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCES.*	MT	017-990-222	SA
ADEMY OF SCIENCES.*	ANNALS. (2).' NEW*YORK ACADEMY OF SCIENCES.*	MT	635-008-222	MD
D SOCIAL SCIENCES.*	ANNALS. (3).' AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCES.*	MT	017-990-333	CA
CES, PHILADELPHIS.*	ANNALS. CUMULATIVE INDEX.' AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCES, PHILADELPHIA	MT	018-057-462	SA
ADEMY OF SCIENCES.*	ANNALS. (1).' NEW*YORK ACADEMY OF SCIENCES.*	MT	635-008-211	PR
RICAN GEOGRAPHERS.*	ANNALS.' ASSOCIATION OF AMERICAN GEOGRAPHERS.*	MT	110-644-510	PR
OCIETY OF AMERICA.*	ANNALS.' ENTOMOLOGICAL SOCIETY OF AMERICA.*	MT	190-817-241	PZ
FOREIGN LANGUAGE	ANNALS.' FOREIGN LANGUAGE	T	314-660-680	ED
EENWICH OBSERVATORY	ANNALS.' HERSIMONCEUX, ENGLAND.ROYAL GREENWICH OBSERVATORY	CR	354-662-507	
NWICH OBSERVATORY.*	ANNALS.' HERSTMONCEUX, ENGLAND.ROYAL GREENWICH OBSERVATORY	MT	366-194-219	SP
MEDICAL RECORD AND	ANNALS.' MEDICAL RECORD AND	T	503-614-986	MD
PIETERMARITZBURG.*	ANNALS. NATAL MUSEUM, PIETERMARITZBURG.*	MT	555-478-521	PR
CADEMY OF SCIENCE.*	ANNALS.' OKLAHOMA ACADEMY OF SCIENCE.*	MT	656-019-231	CM
INSTITUTE. MUSEUM.*	ANNALS.' PITTSBURGH. CARNEGIE INSTITUTE. MUSEUM.*	MT	694-211-197	PR
AMERICKYCH KULTUR.*	ANNALS.' PRAGUE. NAPRSTKOVO MUSEUM AZIJSKYCH, AFRICKYCH A AMERICKYCH KULTUR.*	MT	708-205-742	PR
URGEONS OF CANADA.*	ANNALS.' ROYAL COLLEGE OF PHYSICIANS AND SURGEONS OF CANADA.	MT	759-377-546	MD
RGEONS OF ENGLAND.*	ANNALS.' ROYAL COLLEGE OF SURGEONS OF ENGLAND.*	MT	759-492-123	MD
MUSEUM, CAPE TOWN.*	ANNALS.' SOUTH AFRICAN MUSEUM, CAPE TOWN.*	MT	812-627-403	PR
BOTANICAL GARDEN.*	ANNALS.' ST. LOUIS: MISSOURI BOTANICAL GARDEN.*	MT	768-987-219	PR
ES NAVAL INSTITUTE,	ANNAPOLIS.' UNITED STATES NAVAL INSTITUTE,	SA	617-460-690	CA
	ANNEE EPIGRAHIIQUE.'	T	097-705-284	CA
LL	ANNEE PSYCHOLOGIQUE.'L	T	097-739-823	CA
E ET DES INDUSTRIES	ANNEXES.' CHAMBRE SUISSE DE L HORLOGERIE ET DES INDUSTRIES	SA	833-559-468	CP
ES PRESENTED AT THE	ANNIVERSARY SYMPOSIUM.' MADRAS. INSTITUTE OF MATHEMATICAL SCIENCES.* LECTURES PRESENTED AT	MT	488-973-617	CA
LAWYERS REPORTS	ANNOTATED (INDEXES)' LAWYERS REPORTS	SA	198-509-391	LW
	ANNOTATED BIBLIOGRAPHY OF ECONOMIC GEOLOGY'	T	097-797-592	PU
SION.* SELECTED AND	ANNOTATED BIBLIOGRAPHY OF REFERENCE MATERIAL IN CONSUMER FINANCE. (2).'NATIONAL CONSUMER	MT	571-879-222	SA
SION.* SELECTED AND	ANNOTATED BIBLIOGRAPHY OF REFERENCE MATERIAL IN CONSUMER FINANCE. (1).'NATIONAL CONSUMER	MT	571-879-111	SA
SERVICE. SUPPLEMENT	ANNOTATED BOUND VOLUMES.' AMERICAN LAW REPORTS. LATER CASE SERVICE, SUPPLEMENT	T	061-621-358	LW
UTILITIES REPORTS.	ANNOTATED. (BOUND).' PUBLIC UTILITIES REPORTS.	T	726-048-507	LW
RRENT LAW STATUTES.	ANNOTATED. (BOUND).' SCOTTISH CURRENT LAW STATUTES.	T	781-546-458	LW
RRENT LAW STATUTES.	ANNOTATED. (UNBOUND).' SCOTTISH CURRENT LAW STATUTES.	T	781-546-485	LW
DIAN CRIMINAL CASES	ANNOTATED. (UNBOUND).' CANADIAN CRIMINAL CASES	T	182-566-655	LW
D LAWS OF NEW*YORK.	ANNOTATED. BOOK 16, EDUCATION LAW. CUMULATIVE ANNUAL POCKET PART.' MCKINNEY'S CONSOLIDATED	T	487-846-629	LW
D LAWS OF NEW*YORK.	ANNOTATED. BOOK 57, STATE PRINTING LAW. CUMULATIVE ANNUAL POCKET PART.'MCKINNEY'S CONSOLI	T	487-826-607	LW
D LAWS OF NEW*YORK.	ANNOTATED. BOOK 9, CIVIL SERVICE LAW. CUMULATIVE ANNUAL POCKET PART.' MCKINNEY'S CONSOLIDA	T	487-836-618	LW
D LAWS OF NEW*YORK.	ANNOTATED. CUMULATIVE ANNUAL POCKET PARTS. (1).' MCKINNEY'S CONSOLIDATED LAWS OF NEW*YORK.		487-856-611	LW
D LAWS OF NEW*YORK.	ANNOTATED. CUMULATIVE ANNUAL POCKET PARTS. (2).' MCKINNEY'S CONSOLIDATED LAWS OF NEW*YORK.	T	487-856-622	SA
D LAWS OF NEW*YORK.	ANNOTATED. CUMULATIVE ANNUAL POCKET PARTS. (3).' MCKINNEY'S CONSOLIDATED LAWS OF NEW*YORK.	T	487-856-633	LW
DIAN CRIMINAL CASES	ANNOTATED. (BOUND).' CANADIAN CRIMINAL CASES	T	182-566-644	LW
RTER. MAINE EDITION	ANNOTATED.' ATLANTIC REPORTER. MAIN EDITION	T	112-554-187	LW
LIBRARY ACCESSIONS	ANNOTATED.' NEW*YORK (STATE) DIVISION OF HUMAN RIGHTS.* LIBRARY ACCESSIONS	MT	634-612-998	PP
ETC.* FEDERAL CODE	ANNOTATED, PUBLIC LAWS AND ADMINISTRATIVE MATERIAL. (BOUND).' U.S. LAWS, STATUTES, ETC.* F	MT	885-325-009	LW
ETC.* FEDERAL CODE	ANNOTATED,CURRENT PUBLIC LAWS + ADMINISTRATIVE MATERIAL.UN/BO.' U.S. LAWS, STATUTES, ETC.*	MT	885-324-959	LW
	ANNOTATIONS AND CITATIONS (LAW)- DISTRICT OF COLUMBIA.'	S	787-637-895	LW
	ANNOTATIONS AND CITATIONS (LAW)- DISTRICT OF COLUMBIA.'	S	787-639-906	LW

AMERICAN AVIATION HISTORICAL SOCIETY JOURNAL

BINDING CODE - 1 026-235-914 | SR | VOL | ISSUE | ISSUE | SP | DATE 1 | DATE 2 |

FREQ. - 04P LOC. CODE - PR NYSL. CALL# - 629.13QR514

LATEST RECEIPT V. 16 4 12/01/71 RECEIVED 12/21/71

AMERICAN BANKERS ASSOCIATION.INSTALMENT CREDIT SURVEY. 026-277-425 SEE - 382-730-941

AMERICAN BANKRUPTCY LAW JOURNAL.

BINDING CODE - 1 026-359-931 | SR | VOL | ISSUE | ISSUE | SP | DATE 1 | DATE 2 |

FREQ. - 04U LOC. CODE - LW NYSL. CALL# -

LATEST RECEIPT V. 46 2 04/01/72 RECEIVED 05/02/72

AMERICAN BAR ASSOCIATION. 026-401-321 PACKAGE PLAN

AMERICAN BAR ASSOCIATION ANTI-TRUST LAW JOURNAL

BINDING CODE - 1 026-421-925 | SR | VOL | ISSUE | ISSUE | SP | DATE 1 | DATE 2 |

FREQ. - UNP LOC. CODE - LW NYSL. CALL# -

LATEST RECEIPT V. 41 1 01/01/72 RECEIVED 08/08/72

AMERICAN BAR ASSOCIATION.COMMUNICATIONS COORDINATOR.

BINDING CODE - 1 026-450-936 | SR | VOL | ISSUE | ISSUE | SP | DATE 1 | DATE 2 |

FREQ. - 12U LOC. CODE - LW NYSL. CALL# -

LATEST RECEIPT V. 20 2 3 03/01/72 RECEIVED 05/09/72

AMERICAN BAR ASSOCIATION.COORDINATOR AND PUBLIC RELATIONS BULLETIN. 026-500-652 SEE - 026-450-935

AMERICAN BAR ASSOCIATION. DIRECTORY.

BINDING CODE - 0 026-634-794 | SR | VOL | ISSUE | ISSUE | SP | DATE 1 | DATE 2 |

FREQ. - 01U LOC. CODE - LW NYSL. CALL# -

LATEST RECEIPT V.1971 1971 1972 01/01/71 RECEIVED 02/22/72

AMERICAN BAR ASSOCIATION.FAMILY LAW QUARTERLY.

BINDING CODE - 1 026-667-373 | SR | VOL | ISSUE | ISSUE | SP | DATE 1 | DATE 2 |
| | | 5 | 2 | | 060172 | |

FREQ. - 04P LOC. CODE - LW NYSL. CALL# -

LATEST RECEIPT V. 6 1 04/01/72 RECEIVED 05/16/72

AMERICAN BAR ASSOCIATION.LAW NOTES FOR THE GENERAL PRACTITIONER.

BINDING CODE - 0 027-094-784 | SR | VOL | ISSUE | ISSUE | SP | DATE 1 | DATE 2 |
| | 8 | 4 | | 070172 | |

FREQ. - 04P LOC. CODE - LW NYSL. CALL# -

LATEST RECEIPT V. 8 3 04/01/72 RECEIVED 06/20/72

AMERICAN BAR ASSOCIATION.LAW NOTES FOR THE YOUNG LAWYER.

BINDING CODE - 1 027-266-558 | SR | VOL | ISSUE | ISSUE | SP | DATE 1 | DATE 2 |
| | 8 | 4 | | 070172 | |

FREQ. - 04P LOC. CODE - LW NYSL. CALL# -

LATEST RECEIPT V. 8 3 04/01/72 RECEIVED 06/20/72

AMERICAN BAR ASSOCIATION. PROJECT ON MINIMUM STANDARDS FOR CRIMINAL JUSTICE

BINDING CODE - 0 027-318-343 | SR | VOL | ISSUE | ISSUE | SP | DATE 1 | DATE 2 |

FREQ. - UNP LOC. CODE - LW NYSL. CALL# -

LATEST RECEIPT V.1972 JUN 06/01/72 RECEIVED 08/08/72

THE NEW YORK STATE LIBRARY
PERIODICAL SECTION
ALBANY, NEW YORK 12224

DATE 01/18/72
REFER TO ID 217601319
CLAIM NO. 1 SA

WE HAVE NOT RECEIVED OUR ISSUE OF THE FOLLOWING PUBLICATION.

CIVIL SERVICE OPINION

VOL.- 49 NO.- 577 DATE - 100171

STECHERT-HAFNER, INC.

31 E. 10TH ST.
NEW YORK N.Y. 10003

If Action Has Already Been Taken, Please Ignore This Claim.

The University of the State of New York - The State Education Department

28071

THE NEW YORK STATE LIBRARY
PERIODICAL SECTION
ALBANY, NEW YORK 12224

DATE 12/04/73
REFER TO ID 094846273
CLAIM NO. 2 QP

WE HAVE NOT RECEIVED OUR ISSUE OF THE FOLLOWING PUBLICATION.

ANIMALS.

VOL.- 106 NO.- 10 DATE - 100173

MASS SOC PREV CRUELTY TO ANIMALS

180 LONGWOOD AVENUE
BOSTON,MASS 02115

If Action Has Already Been Taken, Please Ignore This Claim.

The University of the State of New York - The State Education Department

39209

THE NEW YORK STATE LIBRARY
PERIODICAL SECTION
ALBANY, NEW YORK 12224

DATE 01/18/72
REFER TO ID 245249756
CLAIM NO. 3 SB

WE HAVE NOT RECEIVED OUR ISSUE OF THE FOLLOWING PUBLICATION.

COUNCIL OF STATE GOVERNMENTS. STATE HEADLINES.

VOL.- 71 NO.- 22 DATE - 102571

COUNCIL OF STATE GOVERNMENTS
WASHINGTON OFFICE
1735 DE SALES STREET N.W.
WASHINGTON,D.C. 20036

If Action Has Already Been Taken, Please Ignore This Claim.

The University of the State of New York - The State Education Department

28671

UNPREDICTABLE CLAIM NOTICE
OLD ACQUISITION

THE NEW YORK STATE LIBRARY
PERIODICAL SECTION
ALBANY, NEW YORK 12224

DATE 01/18/72
REFER TO ID 252837326
MD

PLEASE ADVISE WHY WE HAVE NOT RECEIVED AN ISSUE SINCE THE ONE INDICATED.
CYTOGENETICS.

LATEST RECEIPT - VOL. 10 NO. 2 PUB.DATE 02/01/71
LATEST INVOICE - NO.T150-767 AMT.$ 37.75
FROM- 01/71 0010 TO- 12/71

WITHOUT PATTERN
PAID — 060771

SWETS AND ZEITLINGER

KEISERAGRACHT 471
AMSTERDAM, NETH.

If Action Has Already Been Taken, Please Ignore This Claim.

The University of the State of New York - The State Education Department

28671

UNPREDICTABLE CLAIM NOTICE
NEW ACQUISITION

THE NEW YORK STATE LIBRARY
PERIODICAL SECTION
ALBANY, NEW YORK 12224

DATE 01/18/72
REFER TO ID 335331152
MD

THE FOLLOWING PUBLICATION WAS ORDERED ON - 12/29/66.
PLEASE ADVISE WHY AN ISSUE HAS NOT BEEN RECEIVED.
GHANA MEDICAL JOURNAL.

LATEST INVOICE - NO.PB135705 AMT.$ 5.00
FROM- 01/72 TO- 12/72

WITHOUT PATTERN
PAID 101371

STECHERT-HAFNER, INC.

31 E. 10TH ST.
NEW YORK N.Y. 10003

If Action Has Already Been Taken, Please Ignore This Claim.

The University of the State of New York - The State Education Department

28671

BINDING NOTICE FOR AN UNPREDICTABLE SERIAL

DATE 01/18/72 NEW YORK STATE LIBRARY LEGISLATIVE REFERENCE BINDING NOTICE

632158371 NEW JERSEY COUNTY GOVERNMENT.

WITHOUT PATTERN UNPRED

BINDING UNIT INCLUDES VOLUMES 1971 1970

NYSL. CALL # TITLE PAGE NONE PUBLISHED

S352.0009749QN53793 TABLE OF CONTENTS NONE PUBLISHED

LOC. CODE - SA INDEX NONE PUBLISHED

UNBOUND CLINIC STRWBRDS/BOX TO BINDERY BOUND

BINDING NOTICE FOR A PREDICTABLE SERIAL

DATE 01/18/72 NEW YORK STATE LIBRARY PERIODICALS-QUARTO BINDING NOTICE

834574356 SUPERVISION.

MONTHLY PRED

	SR	VOL	ISSUE	S/P		SR	VOL	ISSUE	S/P
BINDING UNIT INCLUDES		33	1		TO		33	12	

NYSL. CALL # TITLE PAGE IN AN ISSUE

658QS959 TABLE OF CONTENTS IN AN ISSUE

LOC. CODE - QP INDEX IN AN ISSUE

UNBOUND CLINIC STRWBRDS/BOX TO BINDERY BOUND

Binding Check List

DATE 08/15/72 — NEW YORK STATE LIBRARY — BINDING CHECK LIST — PAGE NO. 1

PERIODICALS-CAT.

AKAD DER WISS GOTTINGEN MATH-PHYS KLASSE NACHRICHTEN.

013-724-953 FREQ.- UNP LOC.- DP
PUB. STATUS - 1
CLAIM CODE - 2

			ACQ. TYPE - 2		
1971	14	120171	2 082272	0261	
1971	13	120171	2 082272	0261	
1971	12	120171	2 082272	0261	
1971	11	110171	2 082272	0291	
1971	10	120171	2 082272	0261	
1971	9	110171	2 082272	0291	
1971	8	100171	2 092272	0321	
1971	7	110171	2 082272	0291	
1971	6	110171	2 082272	0291	
1971	5	100171	2 082272	0321	
1971	4	080171	2 092272	0331	
1971	3	110171	2 082272	0291	
1971	2	100171	2 082272	0321	
1971	1	040171	2 121471	0253	
1970	8	120170	2 121471	0373	
1970	7	110170	2 121471	0403	
1970	6	100170	2 121471	0403	
1970	5	080170	2 121471	0363	
1970	4	020170	2 113071	0659	
1970	3	120170	2 113071	0659	
1970	2	110170	2 113071	0689	
1970	1	010170	2 113071	0659	

TOTAL OF ISSUES 0022 — RECOMPUTED LAG FACTOR UNP — OLD LAG FACTOR - 000

EDUCATION

CONVERGENCE.

240-561-325 FREQ.- 04U LOC.- EC
PUB. STATUS - 1
CLAIM CODE - 1

			ACQ. TYPE - 3		
4	4	110171	2 050272	0161	
4	3	070171	2 012572	0204	
4	2	040171	2 101971	0198	

TOTAL OF ISSUES 0003 — RECOMPUTED LAG FACTOR 0175+ — OLD LAG FACTOR - 000

NATIONAL ELEMENTARY PRINCIPAL.

579-675-814 FREQ.- UNP LOC.- ED
PUB. STATUS - 1
CLAIM CODE - 1

			ACQ. TYPE - 5		
51	6	040172	2 062072	0079	
51	5	020172	2 032072	0057	
51	4	010172	2 022272	0051	
51	3	110171	2 011172	0079	
51	2	100171	2 111671	0045	
51	1	090171	2 101271	0041	

TOTAL OF ISSUES 0006 — RECOMPUTED LAG FACTOR UNP — OLD LAG FACTOR - 000

REVIEW OF EDUCATIONAL RESEARCH.

746-204-679 FREQ.- 06P LOC.- EC
PUB. STATUS - 1
CLAIM CODE - 1

				ACQ. TYPE - 1		
41	5	120171		2 011572	K 0047	
41	4	100171		2 102671	K 0025	
41	3	060171		2 073071	K 0035	
41	2	040171		2 042771	0025	
41	1	020171		2 033071	0059	

TOTAL OF ISSUES 0005 — TOTAL OF HITS 0003 — RECOMPUTED LAG FACTOR 0021+ — OLD LAG FACTOR - 070

- 59 -

10/11/72

Discard List

DATE 08/15/72 NEW YORK STATE LIBRARY LAW UNBOUND ISSUES DISCARD LIST PAGE NO. 10

112345678	ALL ENGLAND REPORTS										
	DISCARD VOLUMES	12	11	10	9	8	7	6	4		
		3	2	1							
222333444	ATLANTIC REPORTER.										
	RECEIVED BOUND	6	5	4	3	2	1				
351740419	HORTICULTURAL SOCIETY OF NEW YORK. BULLETIN.										
	DISCARD VOLUMES	20									

10/11/72

Inventory List

DATE 04/27/71 NEW YORK STATE LIBRARY SCIENCE AND TECHNOLOGY UNBOUND ISSUES INVENTORY LIST PAGE NO. 1

003511151 ACOUSTICS ABSTRACTS.
1967 1 U SER. VOL.0001-0002 PUB.YEAR 1967-1969 ISSUE DATA 013070

012336097 AGRICULTURAL ENGINEERING.
1969 1 U SER. VOL. PUB.YEAR 1969 ISSUE DATA V.50 INDEX MISS 022770

025548819 AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS SOLAR BULLETIN.
1969 1 C SER. VOL. PUB.YEAR 1969 ISSUE DATA V.25 NO.6-8 MISS 041770

079142306 AMERICAN SCIENTIST.
1917 1 U SER. VOL. PUB.YEAR 1917-1922 ISSUE DATA V.5-7,V.8 NO.4 MISS,V.9,V.10 NO.3-4 MISS 022869
1923 1 U SER. VOL. PUB.YEAR 1923-1926 ISSUE DATA V.11 NO.3 MISS,V.12 NO.2,V.13 NO.1 022869
1927 1 U SER. VOL. PUB.YEAR 1927-1930 ISSUE DATA V.15 NO.2,V.16,V.17 NO.1 MISS,V.18 022869
1931 1 U SER. VOL. PUB.YEAR 1931-1935 ISSUE DATA V.19 NO.1,4,V.20,V.21 NO.1-2,V.24 NO.2-4 022869

115873507 AUTOMOTIVE INFORMATION.
1968 1 U SER. VOL.0006 PUB.YEAR 1968-1969 ISSUE DATA 052270

116138240 AVIATION WEEK AND SPACE TECHNOLOGY.
1969 1 C SER. VOL.0091 PUB.YEAR 1969 ISSUE DATA NO.4 MISS 032070

124270513 BELL LABORATORIES RECORD.
1927 1 U SER. VOL. PUB.YEAR 1927-1928 ISSUE DATA V.5 NO.2-6,V.6 NO.1-6 030769
1930 1 U SER. VOL. PUB.YEAR 1930-1931 ISSUE DATA V.9 NO.1 MISS 030769
1933 1 U SER. VOL. PUB.YEAR 1933-1935 ISSUE DATA V.12 NO.1,5 MISS,V.13 NO.2 MISS 030769
1935 1 U SER. VOL. PUB.YEAR 1935-1937 ISSUE DATA V.14 NO.1-4,V.15 NO.1,11 MISS 030769
1940 1 U SER. VOL. PUB.YEAR 1940-1942 ISSUE DATA V.19 NO.5-9,11-12,V.20 NO.4-9 MISS. 030769
1946 1 U SER. VOL. PUB.YEAR 1946 ISSUE DATA V.24 NO.4 MISS. 030769
1948 1 U SER. VOL. PUB.YEAR 1949-1949 ISSUE DATA V.26 NO.2,6,7,11,V.27 NO.11 MISS. 030769

195259767 BUSINESS ATOMICS REPORT. SUPPLEMENT.
1957 1 U SER. VOL. PUB.YEAR 1957-1964 ISSUE DATA V.3-6,V.1963 NO.DEC,V.1964 NO.1,3-4,6 030670

207895592 CHEMISCHES ZENTRALBLATT. INDEXES. (AUTHOR-PATENT).
1966 1 U SER. VOL.0138 PUB.YEAR 1966-1967 ISSUE DATA 060270

207937638 CHEMISCHES ZENTRALBLATT. INDEXES. (SACHREGISTER).
1966 1 U SER. VOL.0137-0138 PUB.YEAR 1966-1967 ISSUE DATA 060270

233937711 COMPUTER JOURNAL
1966 1 U SER. VOL. PUB.YEAR 1966-1968 ISSUE DATA V.9 NO.1,3-4,V.10 NO.1-4 110168
1969 1 U SER. VOL.0012 PUB.YEAR 1969 ISSUE DATA I MISS 041770

Invoice Information List

000067311 AB BOOKMAN S WEEKLY (1).
ACQ.TYPE FREQUENCY — SUPPLIER — FUND CODE - 7 — LATEST RECEIPT
PAID 52U — BOOKMAN S WEEKLY — 50 5 07 72

INV.TYPE	INV.NO.	INV.AMT.	AUTH.DATE	FROM - DATE	VOL.	ISSUE	ISSUE	SP	TO - DATE	VOL-	ISSUE	ISSUE
1	12011969	$13.50	120169	0170					1270			
1	12291970	$13.50	122970	0171					1271			
1	12011971	$13.50	120171	0172					1272			

000130735 AEC POL SCI: ADVANCE BIBLIOGRAPHY OF CONTENTS.
ACQ.TYPE FREQUENCY — SUPPLIER — FUND CODE - 2 — LATEST RECEIPT
PAID UNP — AMERICAN BIBLIOGRAPHICAL CENTER RIVERA CAMPUS — 4 4 060172

INV.TYPE	INV.NO.	INV.AMT.	AUTH.DATE	FROM - DATE	VOL.	ISSUE	ISSUE	SP	TO - DATE	VOL-	ISSUE	ISSUE
1	952565912	$40.00	032869		1							
1	920216	$50.00	112669		2							
1	000296	$43.00	030972		4							

000270432 ACRL MONOGRAPH.
ACQ.TYPE FREQUENCY — SUPPLIER — FUND CODE - 7 — LATEST RECEIPT
STDO UNP — AMERICAN LIBRARY ASSOCIATION — 1970 33 090172

INV.TYPE	INV.NO.	INV.AMT.	AUTH.DATE	FROM - DATE	VOL.	ISSUE	ISSUE	SP	TO - DATE	VOL-	ISSUE	ISSUE
4	506137	$2.25	120167			28						
4	507864	$3.00	051469		30					30		
4	502788	$7.50	030570		31							
4	306916	$4.50	063070		32							

000326856 A.C. CORRESPONDENCE.
ACQ.TYPE FREQUENCY — SUPPLIER — FUND CODE - 7 — LATEST RECEIPT
PAID 25U — AVE MARIA PRESS — 5 3 080572

INV.TYPE	INV.NO.	INV.AMT.	AUTH.DATE	FROM - DATE	VOL.	ISSUE	ISSUE	SP	TO - DATE	VOL-	ISSUE	ISSUE
1	04151971	$5.00	041571	0571					0472			
1	06051972	$5.00	060572	0572					0473			

000559746 AEDS MONITOR.
ACQ.TYPE FREQUENCY — SUPPLIER — FUND CODE - 6 — LATEST RECEIPT
PAID 12U — ASSN FOR EDUCATIONAL DATA SYSTEMS — 10 11 060172

INV.TYPE	INV.NO.	INV.AMT.	AUTH.DATE	FROM - DATE	VOL.	ISSUE	ISSUE	SP	TO - DATE	VOL-	ISSUE	ISSUE
1	S4127	$15.00	081170	1070					0971			
1	4707	$15.00	071571	1071					0972			
1	5313	$15.00	080172	1072					0973			

000676135 AIA-JOURNAL
ACQ.TYPE FREQUENCY — SUPPLIER — FUND CODE - 7 — LATEST RECEIPT
PAID 12U — AMERICAN INSTITUTE ARCHITECTS — 58 2 080172

INV.TYPE	INV.NO.	INV.AMT.	AUTH.DATE	FROM - DATE	VOL.	ISSUE	ISSUE	SP	TO - DATE	VOL-	ISSUE	ISSUE
1	60269	$5.00	060269	0669					0570			
1	C17085	$5.00	051170	0670					0571			

THE NEW YORK STATE LIBRARY
PERIODICAL SECTION
ALBANY, NEW YORK 12224

DATE 08/15/72
REFER TO ID 836984715
NOTICE NO. 1 CA

PLEASE SEND US A RENEWAL INVOICE FOR THE FOLLOWING PUBLICATION.

SVENSK BOKFORTECKNING. AARSKATALOG. SWEDISH NATIONAL BIBLIOGRAPHY.

OUR PRESENT INVOICE EXPIRES - 12/71

STECHERT-HAFNER, INC.

31 E. 10TH ST.
NEW YORK N.Y. 10003

If Action Has Already Been Taken, Please Ignore This Claim.

The University of the State of New York - The State Education Department

20671

THE NEW YORK STATE LIBRARY
PERIODICAL SECTION
ALBANY, NEW YORK 12224

DATE 08/15/72
REFER TO ID 209531535
NOTICE NO. 2 SR

PLEASE SEND US A RENEWAL INVOICE FOR THE FOLLOWING PUBLICATION.

CHICAGO.ORDINANCES,ETC.MUNICIPAL CODE OF CHICAGO.AMENDMENT INSERTS.

OUR PRESENT INVOICE EXPIRES - 01/72

INDEX PUBLISHING CORPORATION

19 SOUTH WELLS STREET
CHICAGO, ILLINOIS 60606

If Action Has Already Been Taken, Please Ignore This Claim.

The University of the State of New York - The State Education Department

20671

Statistical Report

TOTAL NUMBER OF SERIALS IN REPORT - 10943 FOREIGN SERIALS - 3252 DOMESTIC SERIALS - 7691

FREQUENCY	NO. OF SERIALS PRED.	UNPRED.
WEEKLY	28	257
BI-WEEKLY	12	77
SEMI-MONTHLY	26	107
MONTHLY	1006	1181
BI-MONTHLY	290	442
QUARTERLY	595	1161
TRI-ANNUAL	33	120
SEMI-ANNUAL	41	230
ANNUAL *	123	1329
N/O PATTERN		3865

TYPE OF ACQUISITION	NO. OF SERIALS
PAID	5531
GIFT	2562
EXCHANGE	745
STANDING ORDER	859
MEMBERSHIP	490
SEPARATE ORDER	27
INCLUDED IN OTHER ITEM	652
DEPOSITORY	77

PUBLICATION STATUS	NO. OF SERIALS
ACTIVE	10240
INACTIVE	183
SUPERSESSION	0
CEASED	396
MEMBERSHIP	112
PACKAGE PLAN	12

MAIN ENTRY	NO. OF SERIALS
DOCUMENT	7
PERSONAL AUTHOR	16
SOCIETY OR INST.	262
RELIGIOUS SOCIETY OR INST.	11
MISC. CORPORATE BODY	2697
UNIFORM	0
TITLE ONLY	7950

FUND TYPE	NO. OF SERIALS
LAW	965
LEGIS. REFERENCE	1248
MEDICAL	2086
MANUSCRIPTS & HISTORY	166
SCIENCE & TECHNOLOGY	2060
EDUCATION	604
GENERAL REFERENCE	3816

LANGUAGE INDICATOR	NO. OF SERIALS
ONE LANGUAGE	10240
TRANSLATION	113
MULTILINGUAL	590

BINDING	NO. OF SERIALS
DOES NOT BIND	4498
BINDS BY VOLUMES	5996
KEEP LATEST VOLUMES	245
VOLUMES REC. BOUND	204

VOLUME CYCLE CODE	NO. OF SERIALS
NO VOLUME CYCLE CODE	8745
CONTINUOUS	2197
REPEATS AFTER VOL.	1

ISSUE CYCLE CODE	NO. OF SERIALS
NO ISSUE CYCLE CODE	8870
CONTINUOUS	115
REPEATS AFTER ISSUES	1958
REPEATS AFTER VOL.	0
REPEATS AFTER YEARS	0

ISSUE TYPE	NO. OF SERIALS
SINGLE NUMERIC	7607
COMPOUND NUMERIC	283
SINGLE MONTH	18
COMPOUND MONTH	15
SINGLE SEASON	13
COMPOUND SEASON	1
SINGLE DATE ONLY	2161
COMPOUND DATE ONLY	269
NONE	412

	NO. OF SERIALS TITLE PAGE	TABLE OF CONTENTS	INDEX
UNKNOWN	4703	4716	4712
NONE PUBLISHED	3789	4581	3547
IN AN ISSUE	1344	1030	1494
REC. SEPARATELY N/O REQ.	905	463	890
REC. ON REQUEST *	48	24	54
PURCHASED SEPARATELY	16	8	15
REC. IN LAST ISSUE	113	114	217
REC. IN FIRST ISSUE	25	7	14

AGENT	NO. OF SERIALS
NO AGENT	6132
AMERICAN LIBRARY ASSOCIATION	35
AMERICAN MEDICAL ASSOCIATION	16
CALLAGHAN AND COMPANY	14
COMMERCE CLEARING HOUSE	67
CONSULTANTS BUREAU	14
EDWARD THOMPSON	4
EXCERPTA MEDICA FOUNDATION	34
F.W. FARON COMPANY	1588
FRED ROTHMAN	117
H.W. WILSON COMPANY	57
INST. OF ELEC. AND ELEC. ENG.	1
LAWYERS COOPERATIVE PUB. CO.	6
MATHEW BENDER	7
MICHIE AND COMPANY	1
MICRO PHOTO DIV. BELL AND HOWELL	0
NATIONAL EDUCATION ASSOCIATION	67
PRENTICE HALL	17
R.R. BOWKER COMPANY	63
SHEPARDS CITATIONS	108
STECHERT-HAFNER INC.	1611
SUBSCRIPTION SERVICE	99
WALTER JOHNSON	149
WEST PUBLISHING COMPANY	43
ACADEMIC PRESS	18
MAXWELL SCIENTIFIC INTL.	238
UNIPUB INC.	0
PAN AMERICAN UNION	1
AMERICAN PUBLIC HEALTH ASSN.	4
U.S. SUPERINTENDENT OF DOCUMENTS	72
CARSWELL COMPANY	66
MARTINUS NIJHOFF	19
SWETS AND ZEITLINGER	269
ALMQUIST AND WIKSELL	6

LOCATION	NO. OF SERIALS
CA CATALOG SECTION	671
CM CATALOG SERIES CLASSED SEP.	255
CM CATALOG SEPARATES NO SERIES	13
CP CIRC. STACKS PERIODICALS	22
CS CATALOG SERIES CLASSED TOGETHER	8
LT CATALOG SECTION LAST VOL. REF.	261
DP REF. DESK PERIODICALS	134
ED EDUCATION	575
FL FOURTH LEVEL	30
FP FOLIO PERIODICALS	143
HI HISTORY	134
IL INTER-LIBRARY LOAN	1
LB LIBRARY FOR THE BLIND	27
LW LAW	940
MD MEDICAL	2052
OS ORDER SECTION	66
PA INDIVIDUAL PERIODICALS	72
PE CATALOG PERIODICALS	0
PH HISTORY PERIODICALS	54
PM MEDICAL PERIODICALS	0
PP PROF. COLLECTION PERIODICALS	73
PR PERIODICALS	2933
PS LEGIS. REF. PERIODICALS	50
PT TECHNOLOGY PERIODICALS	1
PU MUSEUM PERIODICALS	135
PZ SCIENCE PERIODICALS	79
QP QUARTO PERIODICALS	371
RB RARE BOOKS LIBRARIAN	0
RE REFERENCE	220
RP RUSSIAN STACKS PERIODICALS	50
SA LEGIS. REF. 1	593
SB LEGIS. REF. 2	301
SC LEGIS. REF. 3	52
SD LEGIS. REF. 4	105
SL LEGIS. REF. LIBRARIAN	16
SM STANDARDS AND MATERIALS	8
SP PERIODICAL STACKS	86
SR LEGIS. REF., REFERENCE DESK	73
SS CATALOG LEGIS. REF.	27
ST SCIENCE AND TECHNOLOGY	312

NO. OF INVOICES FOR SERIALS IN THE FOLLOWING CATEGORIES
REGULAR 17247 IRREGULAR 2319

PRESENCE OF SPECIFIC DATA

DATA	NO. OF SERIALS	DATA	NO. OF SERIALS
MYSL CALL #	7018	SUBJ.ENTRY	7235
PRED.PARTS	0	NON-SUBJ.ENTRY	1034
ASTM CODEN.	3043	LC CLASS #	4903
NOTES	6064	LC CARD #	5309
SERIES #	373	VOLUME #	12146

DATA	NO. OF SERIALS	DATA	NO. OF SERIALS
NEW ACQUISITION	72	CURRENT HOLDINGS	10197
FINAL PUBL	10943	RETRO. HOLDINGS	9235
FREQUENCY EXCEPT	226	INVOICES	6184
SUPPLEMENTS	266	CROSS REFERENCES	4828
PARTS	257	VOL. AND ISSUE #	7439

Statistical Report - continued

NO. OF SERIALS BY MAIN LANGUAGE — ENGLISH - 9845 FRENCH - 276 GERMAN - 330

SERIAL RECORDS WITH CHARACTER COUNTS BY DATA FIELD

CHARACTER RANGE	WORK TITLE	MAIN ENTRY	FULL TITLE	NOTES	SUBJ.ENTRIES	NON-SUBJ.ENTRIES
0	0	7921	0	4879	3708	7339
1 - 25	4036	508	6096	482	3459	372
26 - 50	4192	1797	3986	1215	2609	2057
51 - 75	2368	596	701	1137	828	679
76 - 100	266	94	117	734	247	229
101 - 125	141	23	35	712	63	127
126 - 150		4	7	379	13	72
151 - 175		0	0	301	12	27
176 - 200		0	1	261	1	16
201 - 225		0	0	184	0	11
226 - 250		0	0	130	2	3
251 - 275		0	0	91	0	8
276 - 300		0	0	95	1	2
301 - 325		0	0	79	0	0
326 - 350		0	0	56	0	0
351 - 375		0	0	46	0	0
376 - 400				27	0	0
401 - 425				32	0	0
426 - 450				26	0	0
451 - 475				9	0	1
476 - 500				11	0	0
501 - 525				11	0	0
526 - 550				11	0	0
551 - 575				8	0	0
576 - 600				4	0	0
601 - 625				8	0	0
626 - 650				3	0	0
651 - 675				3	0	0
676 - 700				4		
701 - 725				3		
726 - 750				2		
LOW(0 NOT INCL)	3	6	3	5	4	6
HIGH	124	141	179	743	285	470
AVERAGE(0 NOT INCL)	37	41	27	112	32	51

CHARACTER RANGE	PLACE OF PUBL.	PUBLISHER	PUB/SUP NAME	PUB/SUP STREET	PUB/SUP CITY/STATE
0	3	3	3	1270	3
1-10	6441	475	257	390	308
11-20	4296	2875	2764	6432	9571
21-30	203	4125	4842	2851	1061
31-40		2918	2282		
41-50		301	406		
51-60		157	260		
61-70		52	129		
71-80		37			
LOW(0 NOT INCL)	4	4	3	5	4
HIGH	21	75	66	30	30
AVERAGE(0 NOT INCL)	11	26	26	18	15

DATA ITEMS PER SERIAL RECORD

DATA	0	1	2	3	4	5	6-9	10-OVER	LOW(NOT 0)	HIGH	AVG.(NOT 0)
UNEXPECTED SUPPLEMENTS	10077	159	36	21	10	8	11	11	1	48	2
PARTS	10686	34	97	18	34	9	31	29	1	113	6
PREDICTABLE PARTS	10943	0	0	0	0	0	0	0	0	0	0
SUBJECT ENTRIES	2708	4343	2198	548	115	16	13	0	1	9	2
NON-SUBJECT ENTRIES	7339	2931	516	114	27	7	8	1	1	10	1
FREQUENCY EXCEPTIONS	10717	147	66	6	7	0	0	0	1	4	1
CURRENT HOLDINGS	746	2186	1512	1430	1144	625	1415	1665	1	198	7
RETROSPECTIVE HOLDINGS	1708	3706	2135	1228	806	444	644	272	1	44	3
INVOICES	4759	901	1059	1366	1630	767	461	0	1	9	3
CROSS REFERENCES	6115	3165	1025	357	173	58	41	9	1	52	2

SERIALS GROUPED BY START OF PUBLICATION

BEFORE 1850	1850-59	1860-69	1870-79	1880-89	1890-99	1900-09
136	48	87	122	224	273	397
1910-19	1920-29	1930-39	1940-49	1950-59	1960-69	1970-79	NO DATE
461	716	803	1081	2027	2876	266	1426

SERIALS WITH LOCATION CODE RATHER THAN DEWEY CLASS # — PERIODICALS(P)- 0

MEDICAL (M)- 331 LAW (LAW LIB.)- 320 LEGISLATIVE REFERENCE (LEGIS. REF.)- 1

UNCLASSIFIED SERIALS GROUPED BY EARLIEST HOLDING DATE

BEFORE 1950	1950-59	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	NO DATE
889	514	82	85	76	88	136	153	177	359	322	193	205	646

SERIALS WITH RETRO. HOLDINGS IN THE FOLLOWING BINDING DISPOSITION

AT BINDERY - 1664 IN CLINIC - 841 IN STRAWBOARDS - 2211 UNBOUND - 1432

TOTAL RECORDS FOR ALL SERIALS IN THE FOLLOWING CATEGORIES

CURRENT HOLDINGS	66854
RETRO HOLDINGS	25428
INVOICES	20641
CROSS REFERENCES	7765
AT BINDERY	1987
IN CLINIC	1020
IN STRAWBOARDS	6938
UNBOUND	1859

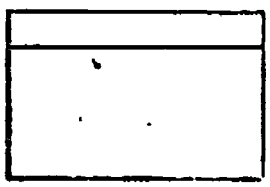
BY CROSS REFERENCE CODES

A00-09	792	B00-49	933	D10-19	84	F50-99	2
A10-19	183	C00-24	148	D40	616	H00-25	7
A20-29	270	C25-49	308	D50	506	H26-50	9
A30-39	43	C50-99	3625	E00-99	442	H51-75	1
A40-49	6	D00-09	43	F00-49	18	P00-49	0
A50-59	123					OTHER	12

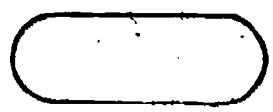
APPENDIX C

SYSTEMS FLOWCHARTS

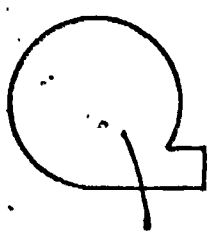
TABLE OF SYMBOLS



COMPUTER PROGRAM



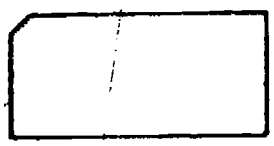
KEY PUNCH OR MOHAWK DATA SCIENCE EQUIPMENT



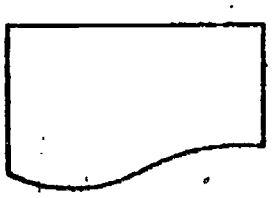
MAGNETIC TAPE

CONNECTOR

DISK FILE



PUNCHED CARD



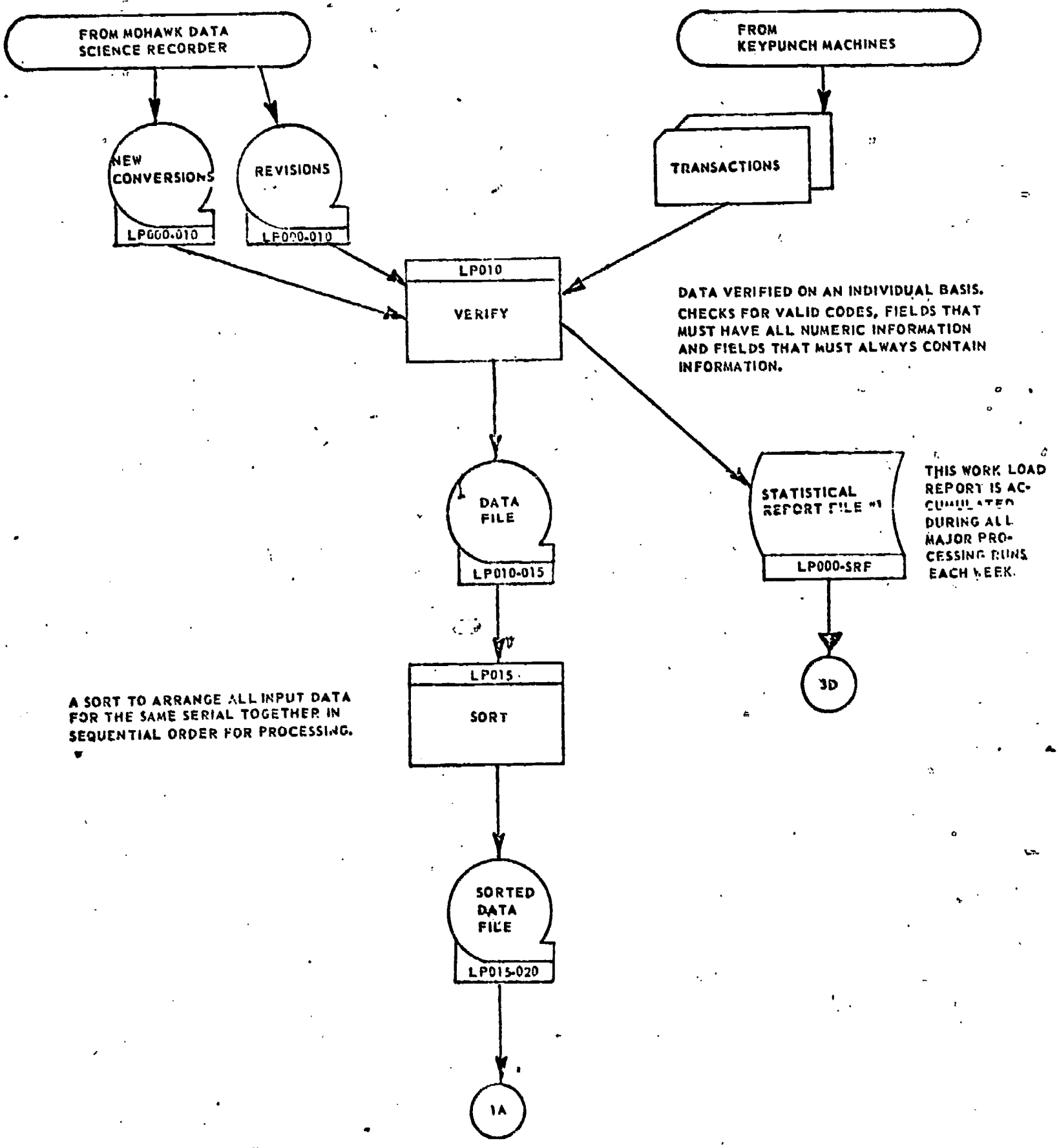
PRINTED REPORT

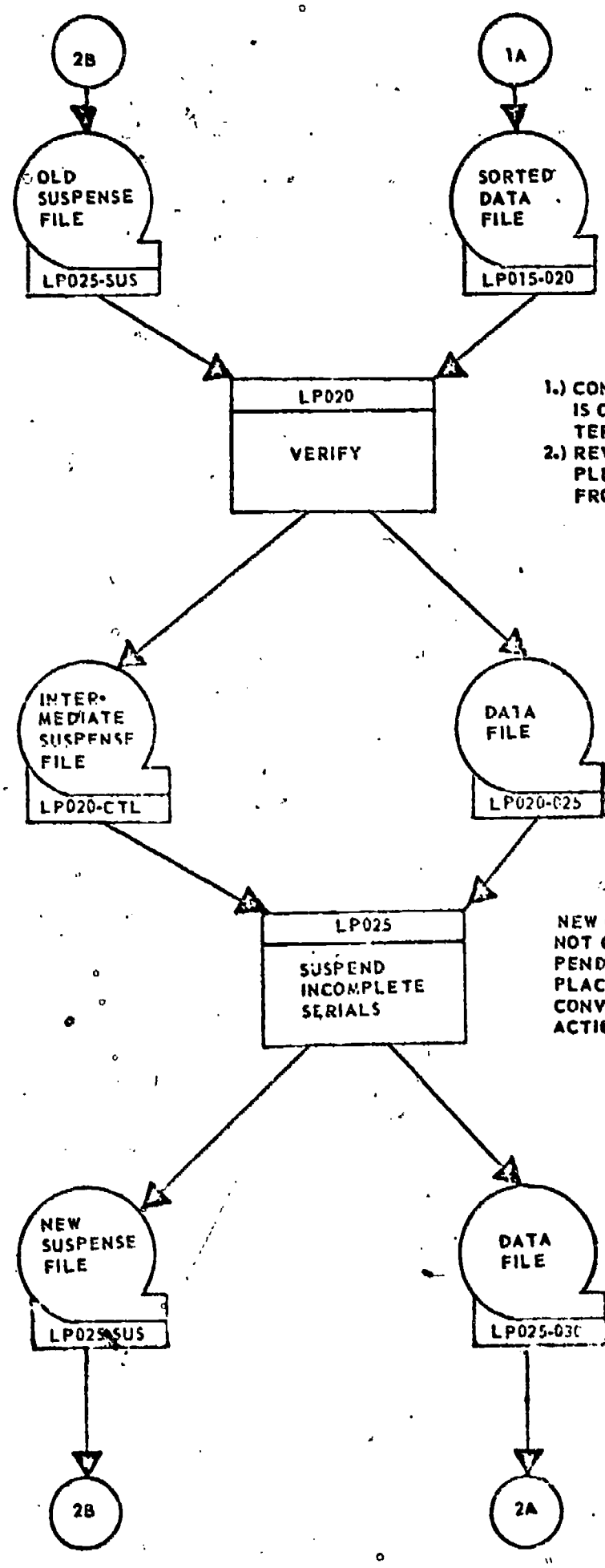
New York State Library Serials System

WEEKLY PROCESSING CYCLE
INPUT VERIFICATION

G-Y

E-Y



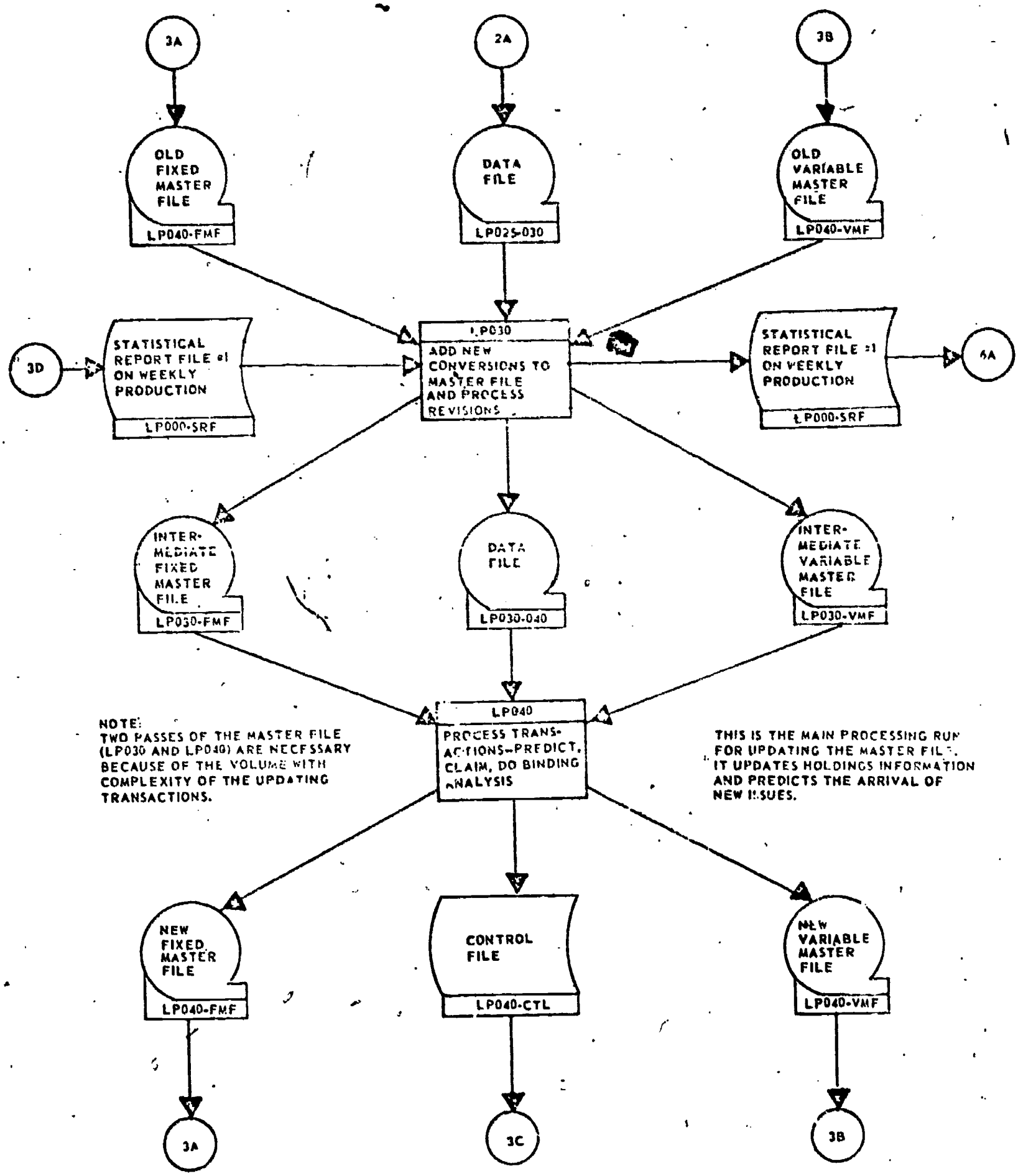


1.) CONVERSION INFORMATION FOR EACH SERIAL IS CHECKED FOR COMPLETNESS AND INTERNAL CONSISTENCY.
2.) REVISIONS ARE PROCESSED AGAINST INCOMPLETE CONVERSIONS ON THE SUSPENSE FILE FROM THE PREVIOUS CYCLE.

NEW CONVERSIONS FOUND TO BE INCORRECT OR NOT COMPLETE, AS WELL AS PREVIOUSLY SUSPENDED CONVERSIONS STILL INCOMPLETE, ARE PLACED ON THE SUSPENSE FILE. COMPLETE CONVERSIONS, ALONG WITH REVISIONS AND TRANSACTIONS AGAINST THE MASTER FILE, ARE PASSED ON.

New York State Library Serials System

MASTER FILE PROCESSING

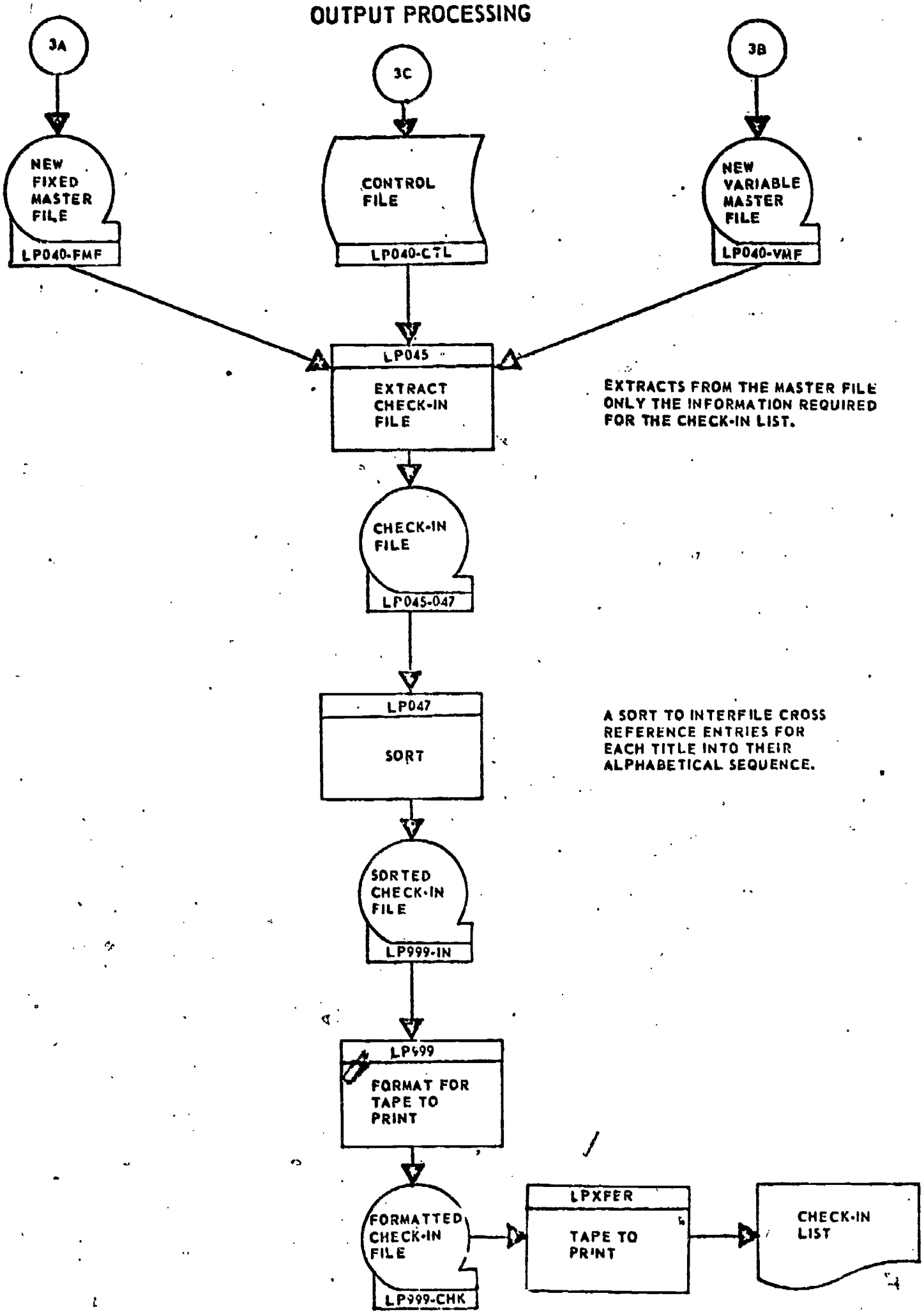


NOTE: PROGRAMS LP080 AND/OR LP090 ARE PROCESSED IF REQUIRED AFTER LP040 AND BEFORE LP045. (PAGE 9)

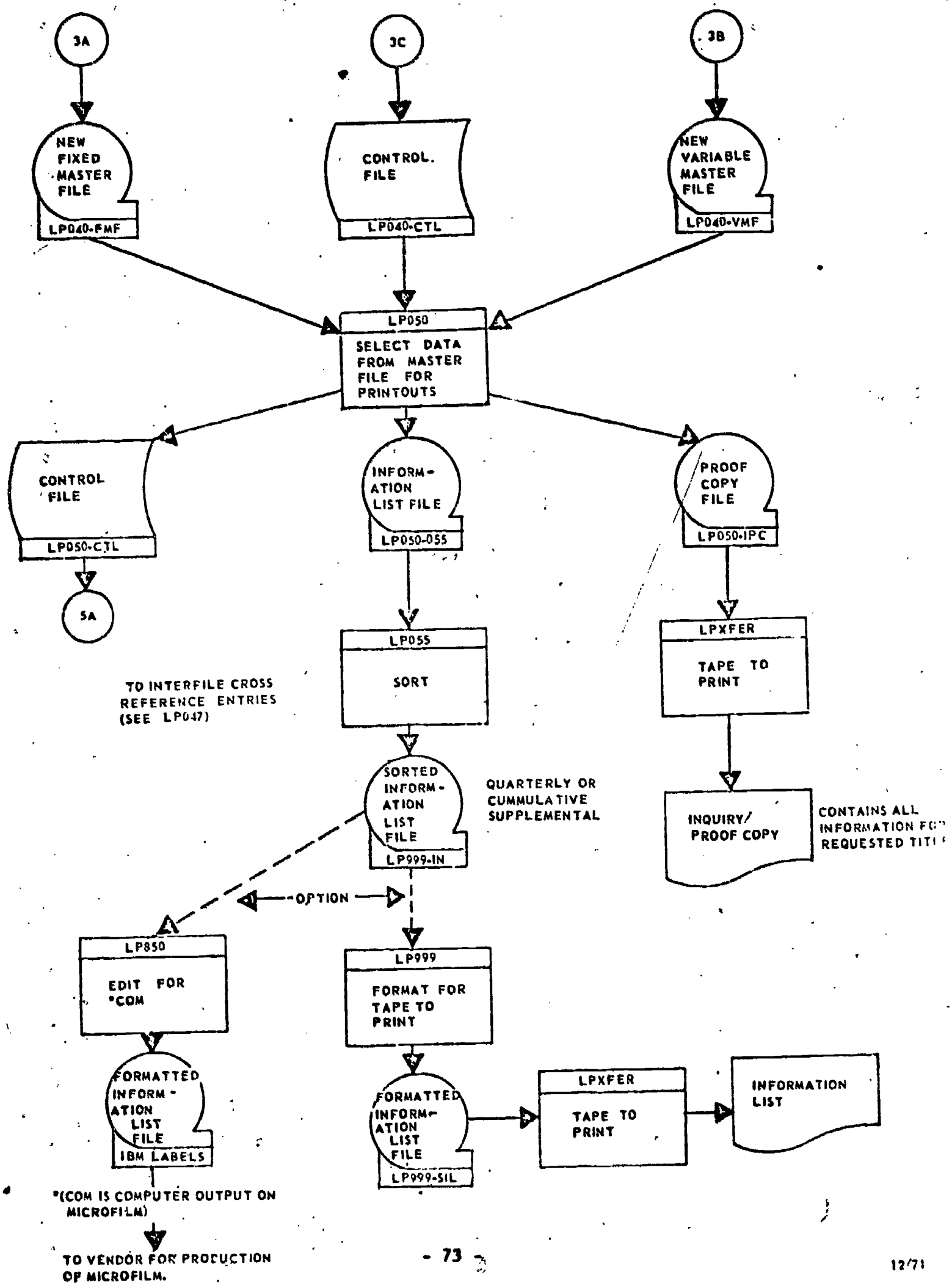
12/71

New York State Library Serials System

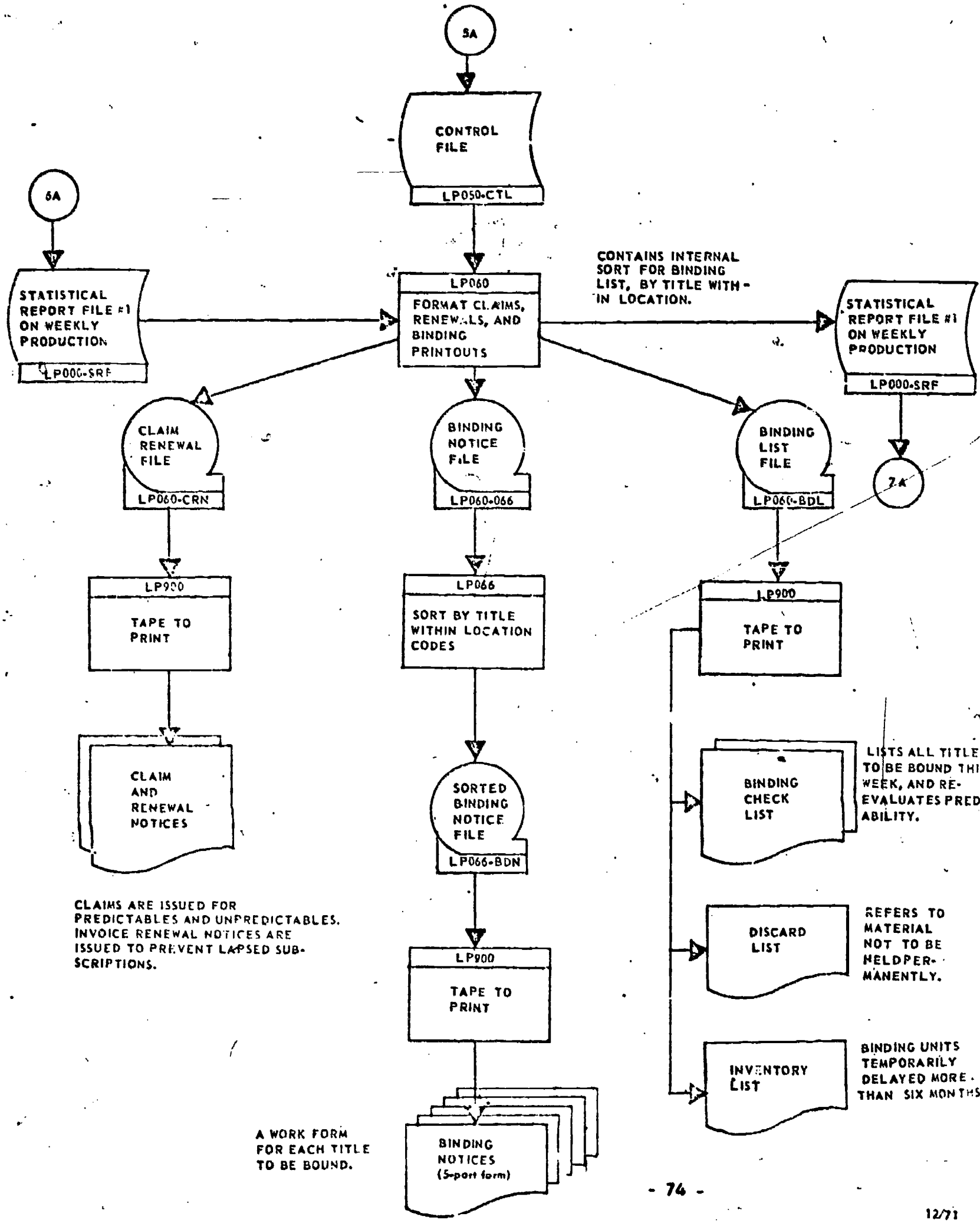
OUTPUT PROCESSING

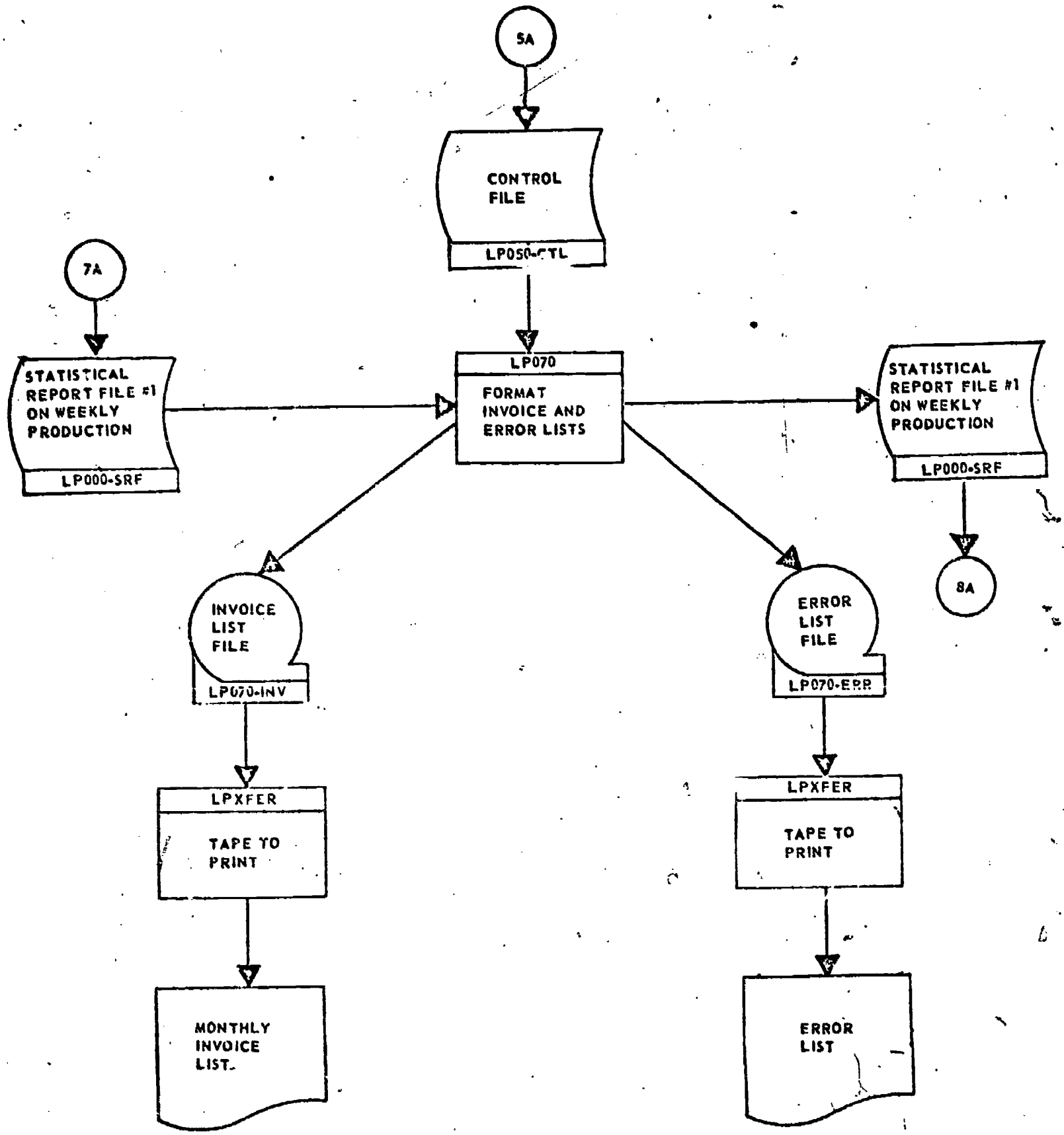


New York State Library Serials System.



New York State Library Serials System

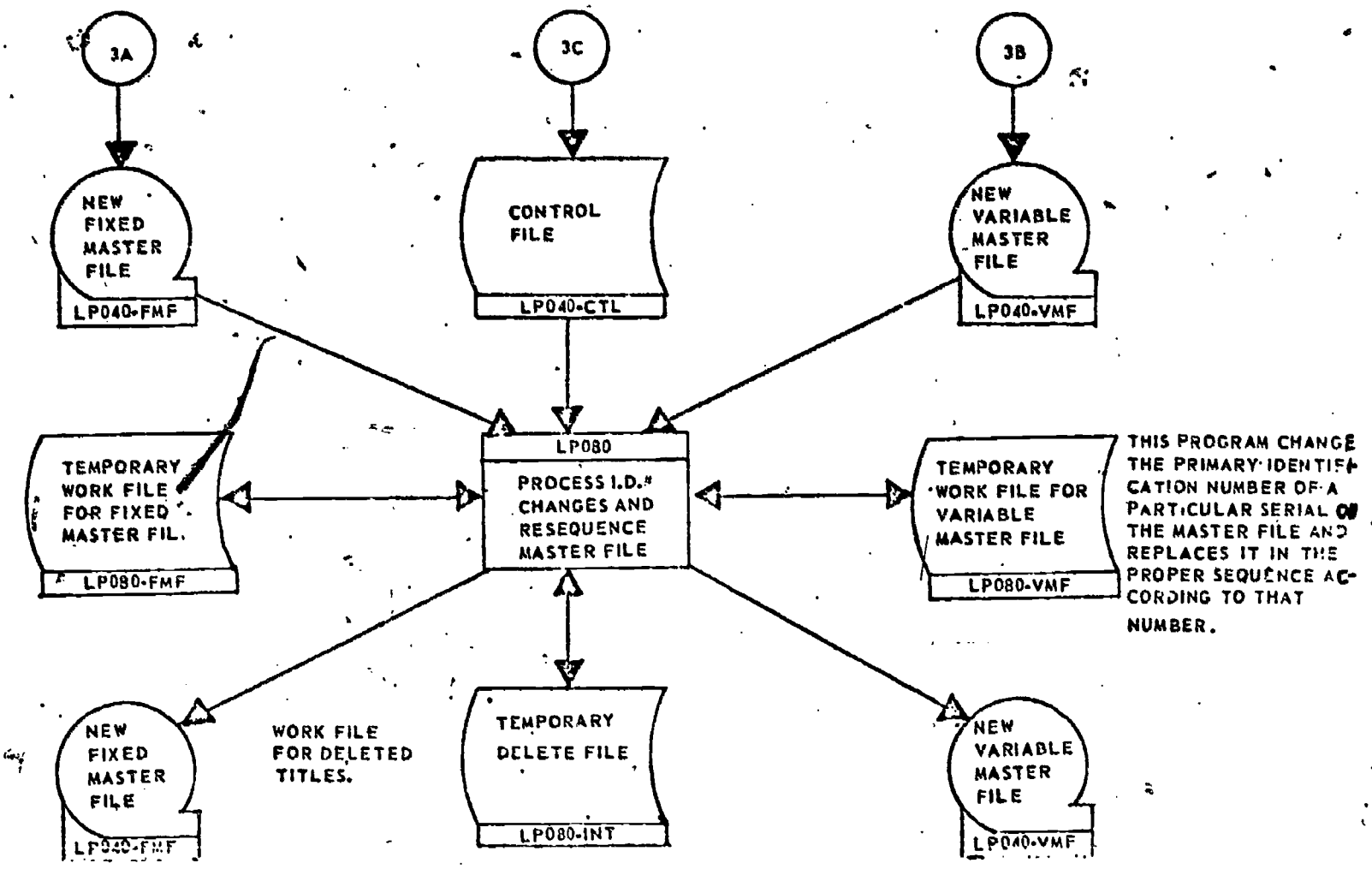




FINANCIAL INFORMATION FOR EACH TITLE. CONTAINS UP TO 9 PREVIOUS INVOICES.

ALL INVALID INPUTS ARE PRINTED WITH AN ERROR MESSAGE INDICATING THE FIRST ERROR FOUND.

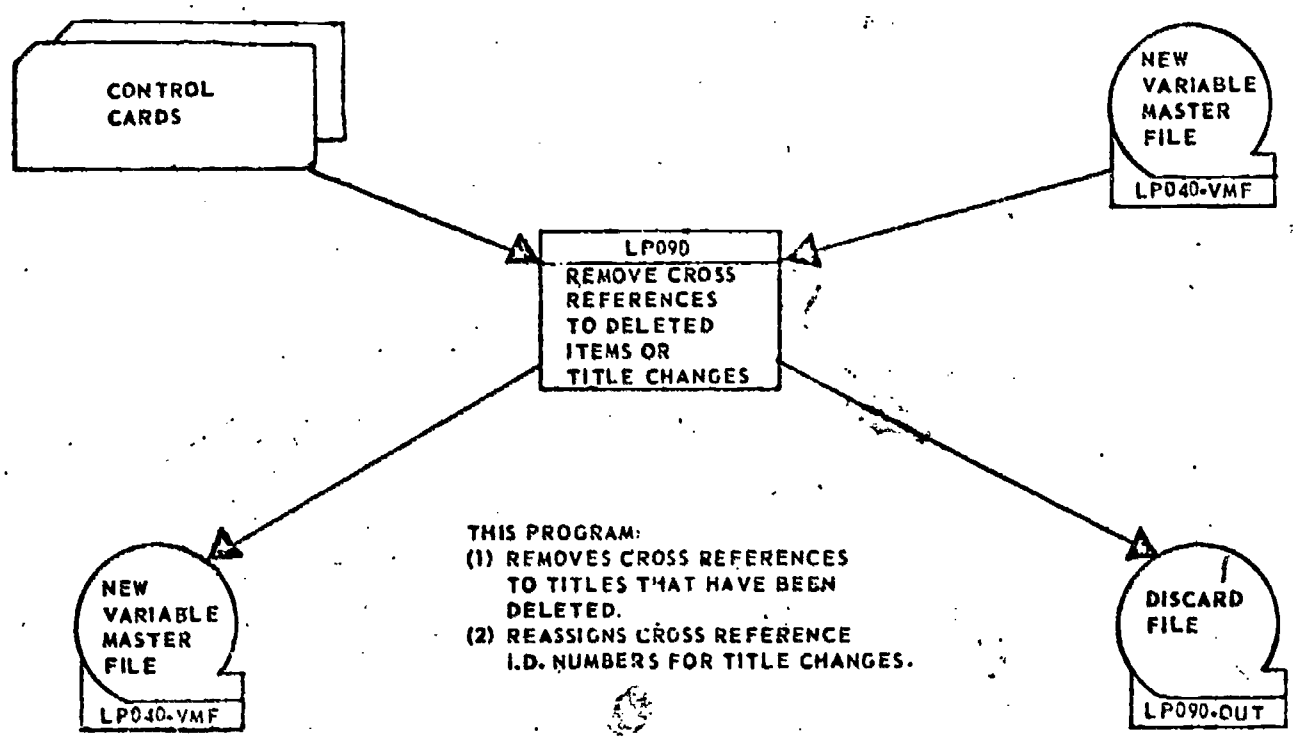
SPECIAL PROGRAMS TO PROCESS TITLE AND CROSS REFERENCE CHANGES



TO LP045 & LP050

TO LP045 AND LP050 OR LP090

FROM LP040 OR LP080

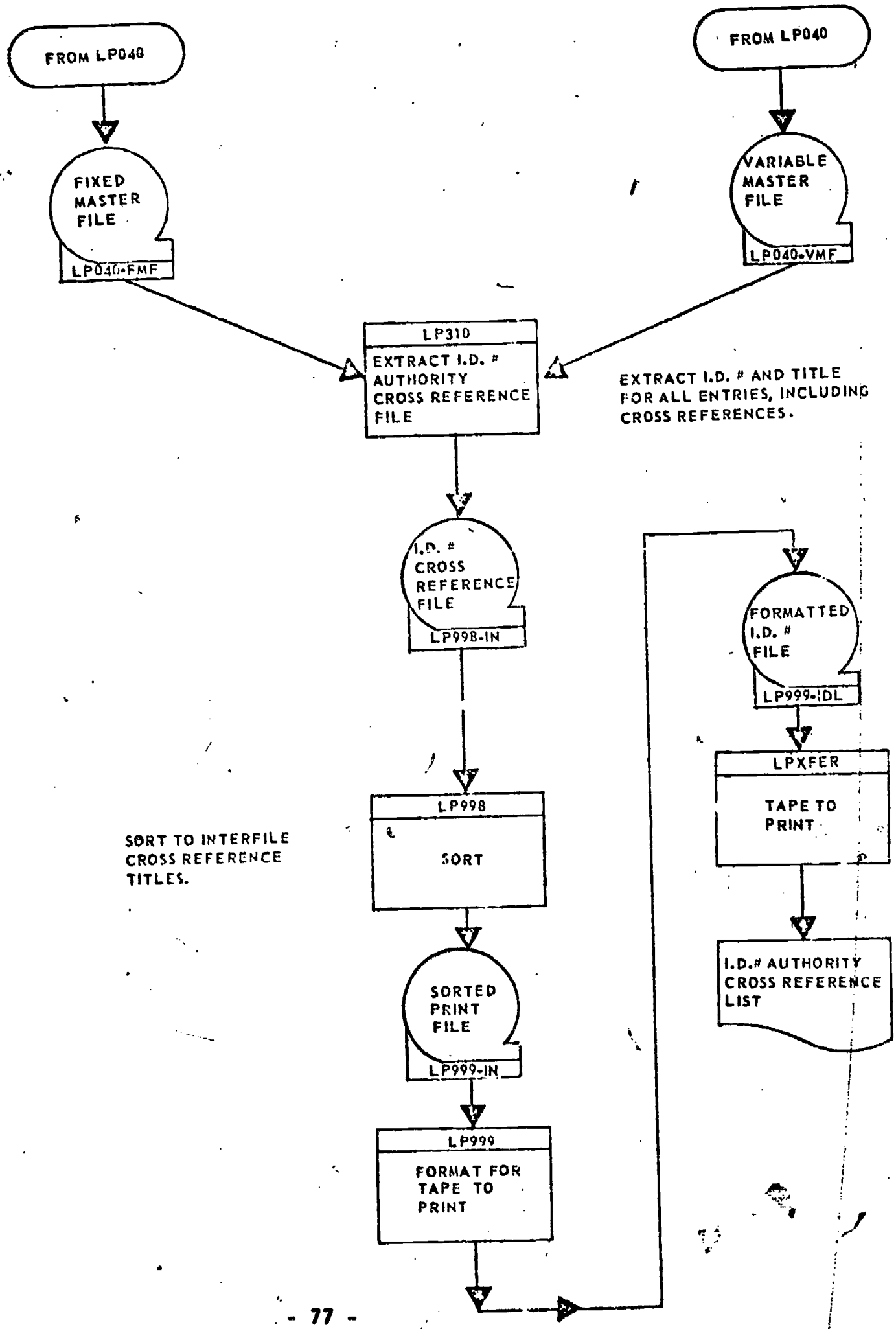


THIS PROGRAM:
(1) REMOVES CROSS REFERENCES TO TITLES THAT HAVE BEEN DELETED.
(2) REASSIGNS CROSS REFERENCE I.D. NUMBERS FOR TITLE CHANGES.

TO LP045 & LP050

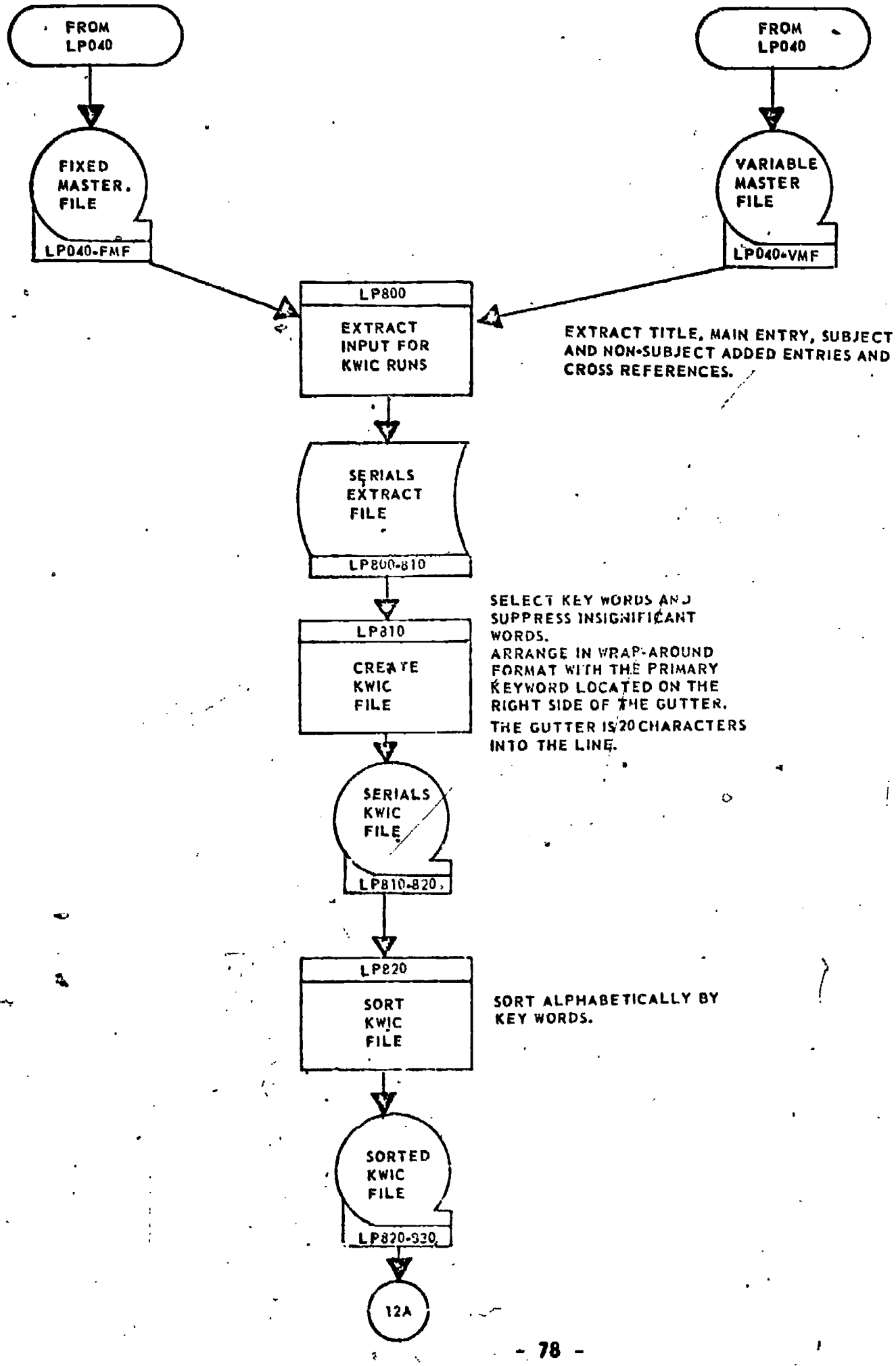
New York State Library Serials System

I.D.# AUTHORITY-CROSS REFERENCE LIST

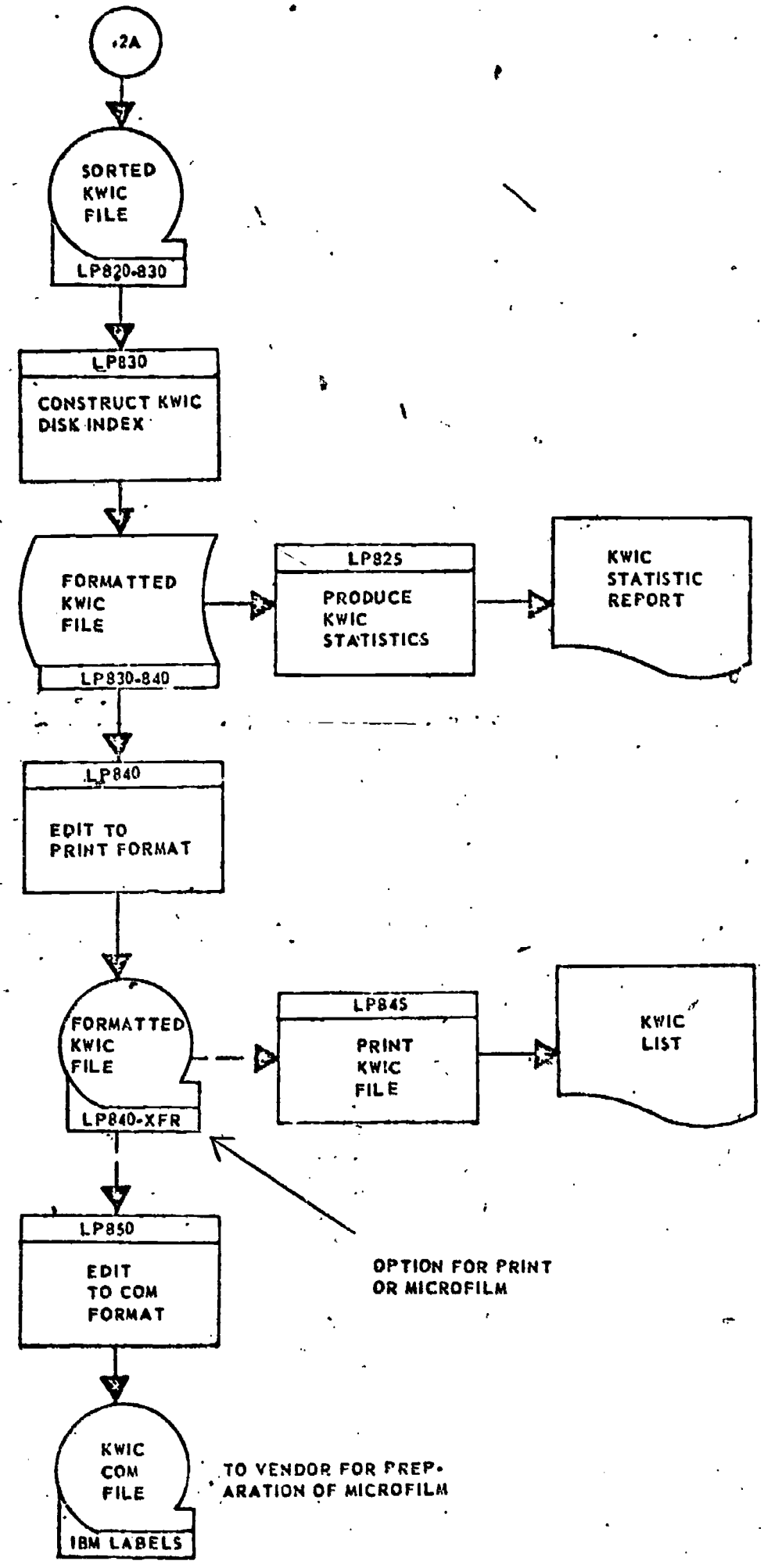


New York State Library Serials System

KEYWORD-IN-CONTEXT LIST

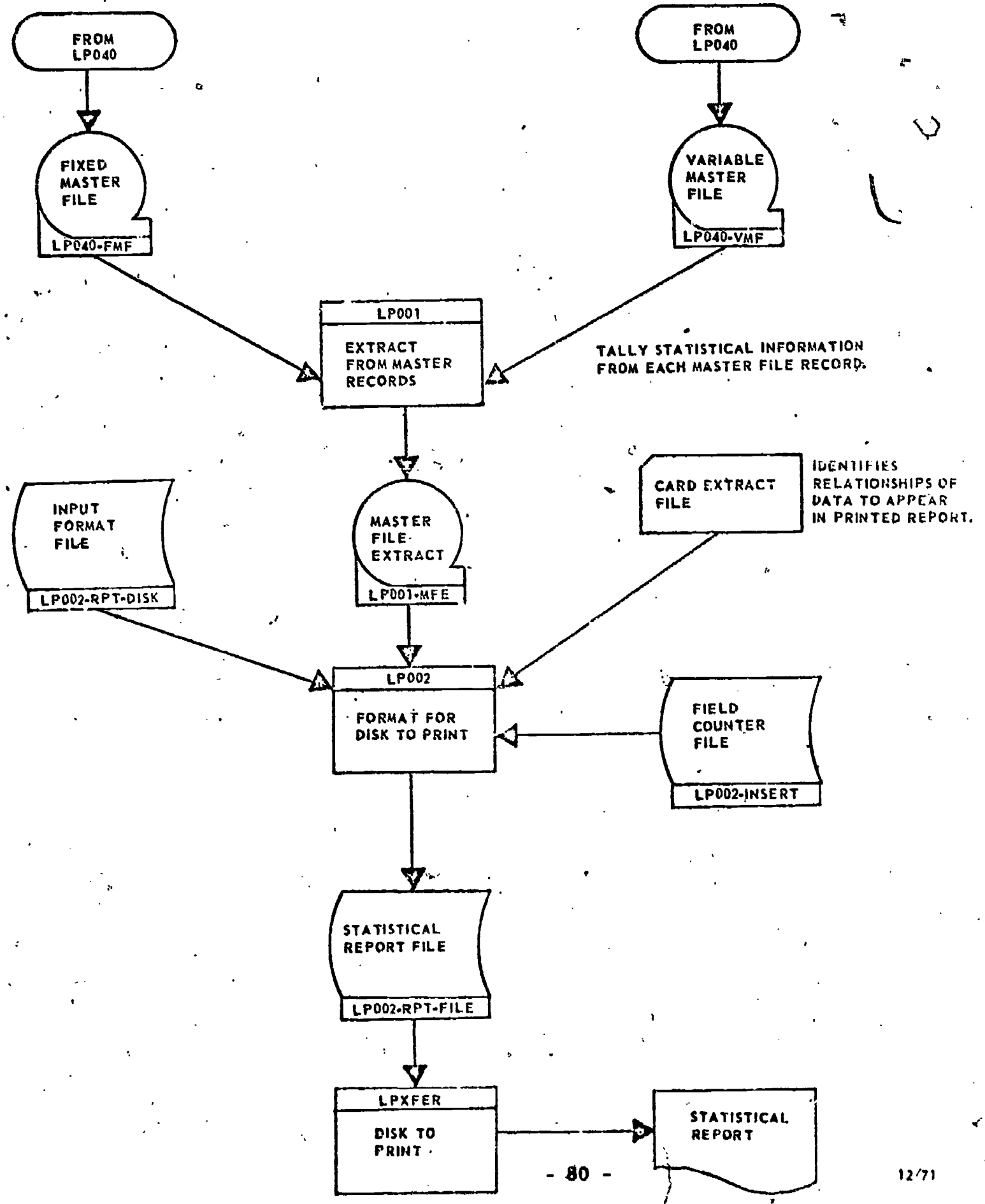


KEYWORD-IN-CONTEXT LIST CONT'D.



New York State Library Serials System

STATISTICAL ANALYSIS OF MASTER FILE



12/71

APPENDIX D

NYSL Serials Control Data Elements

Appendix D

NYSL Serials Control Data Elements

Data Element Name	Tag No.	Length	Definition
ASTM Coden	041	6	A code assigned to this periodical by the American Society for Testing and Materials.
Acquisition Type Code	021	1	A code indicating how the periodical is acquired: purchase, gift, exchange, standing order, included in other item, membership, separate order, or depository.
Agent Code	031	2	Designates agent from whom subscription is ordered.
Authorization Date	081	6	Date invoice is approved for payment.
Bibliographic Notes	501-510	750	Standard items from L.C. card and/or serial catalog cards.
Binding Code	041	1	A code which states the binding pattern of each serial. (Does not bind, binds by volume, volumes discarded, or volumes received bound.)
Claim Code	041	1	Indicates whether a serial is foreign or domestic.
Claim Indicator	*	1	Indicates when a predictable claim is issued.
Creation Date	*	6	Indicates the date each serial was added to the file.
Cross Reference Code	091	3	Code used to differentiate the different types of cross-reference records.
Cross Reference Identification No.	091	9	A number which uniquely identifies a cross reference.
Cross Reference Title	091	124	Determined by library requirements.
Cycle Counter	*	4	A current holding may change from expected to late, claimed, or missing after a specific number of cycles or weeks; this counter shows how many weeks it is in each category. When it changes category, this counter is reset to 0001.

*Computer generated

Data Element Name	Tag No.	Length	Definition
Cycle Run Date	*	6	Date in MMDDYY format containing the date the current cycle is being run which is used to compare the current date to the latest receipt of an unpredictable item. This determines the number of days since an issue has been received for claiming processing. Also used for invoice renewal processing to determine if an updated renewal notice should be generated.
Document Identification Code	021	1	A code to identify government documents by type.
Earliest Holding	001	36	The series number, volume number, issue number, supplement or part number, if applicable, and date of publication of the oldest issue or volume of this periodical in the State Library's collection. Used in conjunction with the latest holding to describe the boundaries of the NYSL holdings of a particular title for the information list.
End of Invoice Period	081	4	The ending date, volume, and issue number. Used to determine when an updated renewal notice should be generated.
Entry Date	*	6	The date a retrospective holding enters the computer system in MMDDYY format.
Entry Year	061	4	Used to sequence control of retrospective holdings.
Final Publication	871	40	The series number, volume number, issue number, supplement or part number, if applicable, and date of publication of the final issue of this periodical.
Frequency Code	021	2	The frequency with which a periodical is published. Code also identifies predictable from unpredictable serials.
Frequency Exception Entries	021	72	The physical issue(s) within the current cycle which depart from the established publication frequency. The type of departure will be expressed as a revised frequency code which will apply only to the issue in question. "Parts" and "Supplements" will be predicted in a similar manner by following the issue number and exception frequency with the letter "P" or "S."

Appendix D: NYSL Serials Control Data Elements--Continued

Data Element Name	Tag No.	Length	Definition
Full title	351-355	375	Self-explanatory.
Function Code	061	1	Indicates the status of each retrospective holding entry (kept, bound, clinic, strawboards, bindery, or unbound).
Fund Type	041	1	A code designating the library fund charged for the purchases of this item.
Hit Indicator	*	1	Identifies issues received during its prediction span.
Index Code	041	1	Indicates index availability for binding.
Invoice Amount	081	5	The amount, in dollars and cents, stated in the invoice.
Invoice Code	081	1	Describes the type of invoice.
Invoice Number	081	9	Vendor's invoice number.
Invoice Renewal Indicator	*	1	Yes or no indicator to control invoice renewal notices.
Issue Data	061	42	May contain any informational statement.
Issue Information	051	36	Reserved for any variation in issues. (Series No., Volume Number, Issue Number, Supplement/Part Indicator, and Publication Dates.)
Issue Numbering Cycle	041	3	Indicates number of issues after which the issue numbering recycles.
Issue Numbering Cycle Code	041	1	Used in conjunction with the next two items only to determine the proper issue identification.
Issue Numbering Cycle Counter	041	3	Counts only physical issues.
Issue/Part Expected Receipt Date	*	40	The month, day, and year of the next expected arrival.
Issue Receipt Date	051	36	Calendar date in month/day/year when an issue is received.

Data Element Name	Tag No.	Length	Definition
Issue Status Code	051	1	Indicates whether a current holding is expected, received late, claimed, or missing.
Issue Type Code	*	1	A code describing the issue pattern (e.g., numeric, season, no issue number).
L.C. Card Number	661	9	The unique identification number assigned to the Library of Congress catalog card.
L.C. Class Number	641	20	The Library of Congress classification number.
Lag Factor	021	3	A three-digit number from 99 to 999 designating the predicted number of days between publication date and the date of expected arrival at the New York State Library. Added to publication date to determine the expected receipt date for the next arrival.
Language Indicator	021	1	A code which indicates one of the following: one language, translation, or multilingual.
Latest Receipt	*	44	The series number, volume number, issue number, supplement or part number, if applicable, and date of publication of the most recent issue of the periodical in the State Library's collection.
Latest Receipt Date	*	6	The month, day, and year of the latest issue of this publication received by the NYSL.
Location Code	021	2	A code designating the subject library or physical area in which the publication is maintained.
Main Entry	301-305	375	The standard catalog entry which is the principal identification key for this system.
Main Entry Code	021	1	Code used to identify the type of main entry.
Major Language	021	4	The major language or only language of the publication.
Master Information List Counter	*	2	Counts number of weeks that a Cumulative Supplement List is issued between Master Lists.

Appendix D: NYSL Serials Control Data Elements--Continued

Data Element Name	Tag No.	Length	Definition
Master Information List Indicator	*	1	An X is placed here if the individual record has been revised since the master was issued and should appear on all subsequent supplemental lists.
Minor Language	021	3	A secondary language; the original language if the periodical is a translation.
New Acquisition Code	*	1	An indicator to identify new subscriptions.
New York State Union List ID Number	021	9	A number which identifies title in the New York State Union List of Serials.
Nonsubject Added Entries	621-629	675	As on standard catalog entries.
Number of Issues Per Volume	041	3	Indicates the number of physical issues in a volume.
Number of Issues Per Volume Counter	041	3	A counter used with above field in recycling or incrementing volume and/or issue numbers of created expected issues.
Number of Volumes to be Bound	041	3	A counter designating the number of volumes to be bound in a set.
NYSL Class Number	001	19	The library identification number assigned during the cataloging operation, consisting of the Dewey classification number, the size indicator, if present, and the Cutter number. The sort key for preparing a classified listing, which implies a subject relationship of serials holdings. Call number for retrieving books from the staff.
Original Subscription Order Date	041	6	The original order date with current supplier.
Place of Publication	401	21	Self-explanatory.

Data Element Name	Tag No.	Length	Definition
Predictable Supplement Code	041	1	Indicates the predictability of supplement on a volume/issue-oriented basis. Used in conjunction with frequency exceptions to predict supplements to a volume or issue.
Predicted Issue, Part	*	44	The serial number, volume number, issue number, supplement or part number, if applicable, and date of publication of the next issue, part, or supplement to be received. Calculated by the computer program using frequency parameters based upon an examination of each title's publishing history and publishing statement.
Predicted Supplement	*	44	See "Predicted Issue, Part."
Proof Indicator	*	1	Indicates request for proof copy.
Publication Start information	001	36	The series number, volume number, issue number, supplement or part number, if applicable, and date of publication of the first published issue of this periodical.
Publisher	451	75	Self-explanatory.
Publisher's or Supplier's Address	031	141	The complete address of the current publisher or supplier of the serial.
Publishing Status Code	021	1	A code to differentiate currently published periodicals from those entries which have ceased publication, merged with others, become inactive, been purchased through a membership or package plan, or undergone title changes.
Record Type Indicator	051 061 081 091	3	A code which indicates type of variable master file record: current holdings, retrospective holdings, invoice, cross reference.

Appendix D: NYSL Serials Control Data Elements--Continued

Data Element Name	Tag No.	Length	Definition
Serial Identification Number	001	9	A number assigned by the library staff based on the alphabetic order of the full title or main entry. Serves to maintain the alphabetic sequence of the file and as a method of machine identification in updating routines.
Sequence Number	061	1	Used to sequence multiple entries made the same entry year.
Series Change Indicator	*	1	Used to process a change in a series number.
Start of Invoice Period	081	4	The beginning date, volume, issue and supplement/part information for each invoice.
Subject Added Entries	601-609	6	As on standard catalog entries.
Subscription Cancellation Date	871	6	Self-explanatory. An information entry for use by the Order Section.
Supplement Expected Receipt Date	*	6	The month, day, and year of next expected supplement.
Table of Contents Code	041	1	Indicates availability of Table of Contents for binding.
Title Page Code	041	1	Indicates title page availability for binding.
Volume Numbering Cycle	041	2	Indicates the number of volumes after which the volume numbering recycles.
Volume Numbering Cycle Code	041	1	A code which indicates that volumes are numbered continuously, repeat after a stated number of volumes, or repeat after a stated number of years. Used in conjunction with the next two items to determine proper volume identification in creating expected issue arrivals.

Appendix D: NYSL Serials Control Data Elements--Continued

Data Element Name	Tag No.	Length	Definition
Volume Numbering Cycle Counter	041	2	Indicates the number of volumes on hand in current holdings.
Week Counter	*	3	A counter to control claim processing.
Work Title	011	125	The main entry/full title of the serial or a 125-character abbreviation of it. Used as the title of the serial on all output listings except the annual Master List.

APPENDIX E

Record Layout:

Fixed Master File

Variable Master File

Record Layout: Fixed Master File

Starting Location	Tag No.	Data Element Name
	001	Serial Identification Number
	001	Publication Start Information
	001	Earliest Holding
	001	NYSL Class Number
	001	Work Title
	021	Main Entry Code
	021	Publishing Status Code
	021	Acquisition Type Code
	021	Location Code
	021	Document Identification Number
	021	Language Indicator
	021	Major Language
	021	Minor Language
	021	Frequency Code
	021	Lag Factor
	021	Frequency Exception Entries
	021	New York State Union List ID No.
	031	Agent Code
	031	Publisher's or Supplier's Address
	041	Volume Numbering Cycle Code
	041	Volume Numbering Cycle
	041	Volume Numbering Cycle Counter
	041	Issue Numbering Cycle Code

*For definition, see appendix D.

Record Layout: Fixed Master File--Continued

Starting Location	Tag No.	Data Element Name
	041	Issue Numbering Cycle
	041	Issue Numbering Cycle Counter
	041	Number of Issues Per Volume
	041	Number of Issues Per Volume Counter
	041	Predictable Supplement Code
	041	Binding Code
	041	Number of Volumes to be Bound
	041	Title Page Code
	041	Index Code
	041	Claim Code
	041	Original Subscription Order Date
	041	ASTM Code
	301-305	Main Entry
	351-355	Full Title
	401	Place of Publication
	451	Publisher
	501-510	Bibliographic Notes
	601-609	Subject Added Entries
	621-629	Nonsubject Added Entries
	641	L. C. Class Number
	661	L. C. Card Number
	xx*	Proof Indicator
	xx	Issue Type Code
	xx	New Acquisition Code
	xx	Invoice Renewal Indicator

*xx Computer generated

Record Layout: Fixed Master File--Continued

Starting Location	Tag No.	Data Element Name
	xx	Predicted Issue, Part
	xx	Predicted Supplement
	xx	Latest Receipt
	xx	Creation Date
	xx	Week Counter
	xx	Issue/Part Expected Receipt Date
	xx	Supplement Expected Receipt Date
	xx	Latest Receipt Date
	871	Subscription Cancellation Date
	xx	Master Information List Counter
	xx	Master Information List Indicator
	xx	Cycle Run Date

Record Layout: Variable Master File

Starting Location	Tag No.	Data Element Name
1. Current Holdings		
	051	Serial Identification Number
	051	Record Type Indicator
	051	Issue Information
	051	Issue Status Code
	051	Issue Receipt Date
	xx	Hit Indicator
	xx	Claim Indicator
	xx	Series Change Indicator
	xx	Cycle Counter
	xx	Master Information List Indicator
2. Retrospective Holdings		
	061	Serial Identification Number
	061	Record Type Indicator
	061	Entry Year
	061	Sequence Number
	061	Function Code
	061	Issue Information
	061	Issue Data
	xx	Entry Date
	xx	Master Information List Indicator

Record Layout: Variable Master File--Continued

Starting Location	Tag No.	Data Element Name
3. Invoice		
	081	Serial Identification Number
	081	Record Type Indicator
	081	Invoice Code
	081	Invoice Number
	081	Invoice Amount
	081	Authorization Date
	081	Start of Invoice Period
	081	End of Invoice Period
	xx	Invoice Renewal Indicator
4. Cross Reference		
	091	Serial Identification Number
	091	Record Type Indicator
	091	Cross Reference Code
	xx	Master Information List
	091	Cross Reference Identification No.
	091	Cross Reference Title

APPENDIX F

SIMILAR DATA ELEMENTS IN MARC AND NYSL

UNIQUE DATA ELEMENTS IN MARC

UNIQUE DATA ELEMENTS IN NYSL

Similar Data Elements in MARC and NYSL

MARC DATA ELEMENT NAME	Tag No.	NYSL Tag No.*
L.C. card no.	010	661
Coden	030	041
Languages	041	021
L.C. call number	050	641
DDC number	082	001
Main entry-personal name	100	301-305
Main entry-corporate name	110	301-305
Main entry-corporate name-conference or meeting	111	301-305
Title as it appears on piece	200	351-355
Uniform title	240	351-355
Full title	245	351-355
Vary forms of title	246	091
Former titles or title variations	247	091
Imprint	260	401, 451
Subscription address	265	031, 032
Frequency	310	021
Dates and volume designations	362	001
General note	500	501-510
Indexing and abstracting coverage	510	501-510
Note for explanation of dates, vol., etc.	515	501-510

*For definition of NYSL tags, see appendix D.

Similar Data Elements in MARC and NYSL - continued

MARC DATA ELEMENT NAME	Tag No.	NYSL Tag No.*
Supplement note	525	501-510
Additional physical forms available	530	501-510
Cumulative indexes	555	501-510
Subject heading-personal name	600	601-609
Subject heading-corporate name	610	601-609
Subject heading-conference name	611	601-609
Subject heading-uniform title heading	630	601-609
Subject heading-topical heading	650	601-609
Subject heading-geographical name	651	601-609
Personal names-others associated with work	700	621-629
Corporate names-others associated with work	710	621-629
Corporate names-conferences-others associated with work	711	621-629
Holdings	850	051,061

*For definition of NYSL tags, see Appendix D.

Unique Data Elements in MARC

Unique to MARC			
Tag no.	Name	Tag no.	Name
015	National bibliography no.	490	Series statement - untraced or traced differently
022	Standard serial code	730	Uniform heading title
025	Overseas acquisition no.	760	Main series entry
040	Imput cataloging source	765	Original entry
051	L.C. copy statements	767	Translation entry
060	NLM call number	770	Supplement/special issue entry
061	NLM copy statement	772	Parent record_entry
070	NAL call number	775	Other editions available
071	ANL copy statement	776	Additional physical forms available
250	Edition statement	777	Issued with entry
300	Collation	780	Preceding entry
350	Subscription price	785	Succeeding entry
400	Series statement - personal name/title (traced)	800	Series added entry - personal name/title
410	Series statement - corporate name/title (traced)	810	Series added entry - corporate name/title
411	Series statement - conference or meeting (traced)	811	Series added entry - conference name/title
440	Series statement - title (traced)	840	Series added entry - title

Unique Data Elements in NYSL

Unique to NYSL			
Tag no.*	Name	Tag no.*	Name
021	Acquisition Type Code	041	Index Code
031	Agent Code	081	Invoice Amount
081	Authorization Date	081	Invoice Code
041	Binding Code	081	Invoice Number
041	Claim Code	*	Invoice Renewal Indicator
*	Claim Indicator	061	Issue Data
091	Cross Reference Code	051	Issue Information
091	Cross Reference Identification Code	041	Issue Numbering Cycle
*	Cycle Counter	041	Issue Numbering Code
*	Cycle Run Date	041	Issue Numbering Cycle Counter
021	Document Identification Code	*	Issue/Part Expected Receipt Date
001	Earliest Holding	051	Issue Receipt Date
081	End of Invoice Period	051	Issue Status Code
*	Entry Date	*	Issue Type Code
061	Entry Year	021	Lag Factor
871	Final Publication	*	Latest Receipt
021	Frequency Exception Entries	*	Latest Receipt Date
061	Function Code	021	Location Code
041	Fund Type	*	Master Information List Indicator
*	Hit Indicator		

*For definition of NYSL tags, see appendix D.

Unique Data Elements in NYSL - continued

Unique to NYSL			
Tag no.*	Name	Tag no.*	Name
*	New Acquisition Code	081	Start of Invoice Period
021	New York State Union List ID Number	871	Subscription Cancellation Date
041	Number of Issues per volume	041	Table of Contents Code
041	Number of Issues per volume counter	041	Title Page Code
041	Number of volumes to be bound	041	Volume Numbering Cycle
001	NYSL Class Number	041	Volume Numbering Cycle Code
041	Original Subscription Order Date	*	Week Counter
041	Predictable Supplement Code		
*	Predicted Issue, Part		
*	Proof Indicator		
021	Publishing Status Code		
051	Record Type Indicator		
061			
081			
091			
001	Serial Identification No.		
061	Sequence Number		
*	Series Change Indicator		

* For definition of NYSL tags, see appendix D.

APPENDIX G

COMPUTER OUTPUT MICROFILM

EVALUATION

New York State Library
Computer Applications Section

Computer Output Microfilm Evaluation

July 20, 1971

Summary

The Computer Output Microfilm experiment was undertaken to allow the Library to explore an alternate method of producing multiple copies of computer printout.

As a result of this experiment the library had concluded that:

(1) Microfilm display met all the library's information requirements as successfully as conventional computer printout.

(2) There was good user acceptance, and most users found microfilm superior in convenience and speed of retrieval.

(3) There were no serious technical problems in the production or use of microfilm.

(4) Use of COM resulted in a significant cost reduction ($5973 in a 6-month period) over conventional computer printout.

(5) COM has demonstrated potential as a format for distributing information about State Library serials holdings to other libraries.

(6) Utilization of microfilm resulted in the projected reduction in the computer operations schedule and other related off-line operations.

Recommendation

Utilization of conventional computer printout for the weekly information list and the retrospective holdings list should be discontinued, and this information should be distributed in the future on Computer Output Microfilm.

Computer Output Microfilm Experiment

EVALUATION

Introduction

The purpose of this report is to make available the results of an evaluation of the Computer Output Microfilm experiment at the end of 4 months of a proposed 6-month operation.

Sufficient information has been gathered at this point for an evaluation which will enable the library to make recommendations as to the success of the use of COM before the contract expires. If favorable, it will be possible to continue operations without a break in service.

Problems

(1) One of the stated objectives of the automated serials system is to make current information about State Library serials holdings available at a number of points in the library, resulting in savings in staff time and in improved reader service. It was also an objective of the system to produce this information in a form which could be distributed to the customers of the library elsewhere in the State. This information would update and replace serials holdings lists published by the State Library in 1953 and 1967.

The library presently requires 10 copies of existing reports and approximately 1000 will be needed for statewide distribution. It is this demand that necessitates the examination of alternate methods of producing multiple copies.

(2) The library computer output requirements now exceed the 1 million page mark per year. This volume of output, coupled with the library's need for multiple copies (10) of existing reports places the Division of Electronic Data Processing in the position of being a producer of paper output at very high cost, which results in inefficiency of EDP operations. At the present time, the computer can only print five legible copies at one time, and the additional five copies require a separate print run. This causes several inefficiencies in operations, one of which is the use of high speed computer for low speed output which in turn produces an extremely high cost per copy output.

Solutions

There are six generally used methods of producing multiple copies of computer generated reports:

(1) High speed xeroxing of computer printout

(2) Repeated runs on computer printers using manifold forms (this is the existing method now being used)

(3) Offset duplication from a master generated by computer printer

(4) Microfilming computer printout

(5) COM recording device to enlarger to offset duplication for paper copies

(6) COM recording device to microfilm

The methods are listed in order of descending cost from the high of $3.50 per 10 copies of 100 pages each for the xeroxing method down to $.25 per 10 copies of 100 pages each for the COM to microfilm. (See attached chart.)

The difference in cost between the existing method now used and the COM microfilm is substantial, and, when taken into consideration with other factors such as availability of service, the length of time it takes to provide the service and

convenience of use indicates that COM could possibly be the solution to the library's multicopy problem.

Implementation

The following objectives of the study were established and reflect the intentions of the library and the Division of EDP:

(Library)

(1) Evaluation of a less expensive method (microfilm) for producing quantities of eye-readable output.

(2) Gaining increased knowledge of problems of using library indexes and catalogs on microfilm including an evaluation of the effectiveness of use by patrons and staff.

(3) Identification of any need for improved techniques in microfilm indexing.

(4) Establishment of acceptable standards of quality for COM reproduction and development of specifications for microfilm readers that are best for COM use in libraries.

(5) Evaluation of COM as a method for statewide dissemination of bibliographic information.

(EDP)

(1) Progress toward elimination of third shift operations. (Currently the Division of EDP is making a major effort in this direction.)

(2) A more efficient computer operation, reducing the use of the computer solely as a printer.

(3) Knowledge to be gained by programers in preparing tapes for COM.

(4) Experience with the potentials of COM for future consideration of COM devices in-house.

In order to realize immediate benefits from the experiment, it was decided to

eliminate the extra print run that produced five copies of the information list and the retrospective holdings list. These were to be produced on microfilm and microfilm readers installed in those locations that would no longer receive computer printout. The areas decided upon were selected so that they represented a cross section of the entire library operation and had a high level of use of serials information. The locations were the General Reference Library, Interlibrary Loan, Legislative Reference Library, Periodical Section, and Cataloging.

Specifications (attached) describing the service to be performed and the number of microfilm readers required were sent to six COM service bureaus. The bids were reviewed and a contract awarded to FINSERV Computing Corporation.

The contract called for the production of five copies of the serials information list for a period of 26 weeks, and five copies of the Retrospective Holdings list to be produced three times during the 26-week period. Also, five microfilm readers were to be provided.

The operating schedule called for pickup by FINSERV on Wednesday morning at 9 a.m. and delivery by FINSERV on Thursday morning at 9 a.m. This has been maintained for 4 months with no problems whatsoever.

It was the responsibility of the Division of EDP to provide a magnetic tape that contained the serials information, and one that contained the retrospective holdings list. A problem of compatibility between the Education Department's CDC 3300 and FINSERV's IBM 360 Model 50 was encountered resulting in the inability of the IBM 360 to read the magnetic tapes. This was resolved and no further problems concerning the technical aspects of the experiment developed.

One week prior to installation of the readers and microfilm, a general session for library staff was held to demonstrate the readers. The readers were installed the same time the first microfilm copies of the serials information list were distributed, and brief instructions on the operation of the reader were given to key personnel.

The status of the experiment has not been altered since it began 4 months ago, and no changes are anticipated before conclusion 2 months from now.

Results

After 4 months of operation, the experiment has allowed the library and EDP to realize their goals with the exception of distributing the microfilm on a statewide basis. However, reels of microfilm containing the serials retrospective holdings list are available for distribution to interested libraries. The Division of Library Development has been alerted to this.

Observations

(1) Cost Comparison for the Serials Information List

	5 Copies for 6 Months	
	Computer Printout	Microfilm
Computer Print Time		
26 runs x 1½ hours per run = 39 hours @ $165 per hour =	$6390	$ -0-
Paper		
1300 pages x 26 runs = 33,800 pages ÷ 500 pages per box = 68 boxes @ $20 per box =	1360	-0-
Decollating Time		
1 man-hour per week x 26 weeks = 26 man-hours x $3.39 per hour =	88	-0-
Service Bureau		
Average pages per run = 1465 x 26 runs = 38090 pages @ .04153 for 6 copies = $1582 =	-0-	1582
TOTAL	$7838	$1582
Savings	$5756	

(2) Cost Comparison for the Retrospective Holdings List

	5 Copies for 2 Runs	
	Computer Printout	Microfilm
Computer Print Time		
2 runs x 1 hour per run = 2 hours @ $165 per hour	$330	$ -0-
Paper		
1100 pages x 2 runs = 2200 pages ÷ 500 pages per box = 5 boxes @ $20 per box =	100	-0-

Observations Continued

		5 Copies for 2 Runs Computer Printout	Microfilm
	Decollating Time		
	3/4 man-hours x 2 runs		
=	1½ hours @ $3.39 per hour =	5	-0-
	Service Bureau		
	Average page per run = 1050 x 2 runs		
=	2100 pages @ .04153 for 6 copies =	-0-	$88
	TOTAL	$435	$88
	Savings	$347	
	Total for Both Lists for 6 Months		
		$8273	$1670
5	Microfilm Readers for 6 Months	-0-	630
		$8273	$2300

TOTAL SAVINGS for 6 Months $5973

(3) Cost Per Copy for the Information List

Computer Printout

Computer print time	248
Paper	60
Decollating	2
Cost for 5 copies =	$310
Cost per copy =	$ 62

Microfilm

1465 pages @ $.04153 per page =	
$61 for 6 copies =	
$10 per copy + $2 for reader =	
Cost per copy =	$12
Savings	$50 per copy

(4) Cost Per Copy for the Retrospective Holdings List

Computer Printout

Computer print time	165
Paper	40
Decollating	2
Cost for 5 copies =	$207
Cost per copy =	$ 41

Microfilm

1050 pages @ $.04153 per page =	
$43 for 6 copies =	
$ 7 per copy + $2 for reader =	
Cost per copy =	$ 9
Savings	$32 per copy

Observations

(2) User Response

Response from the users in the selected sections has been extremely favorable. Interviews with operators and with section heads indicated that the microfilm reader was preferred over the computer printed list. The following comments pertaining to the comparison of the printout vs the microfilm and reader are typical of those received:

(1) Microfilm speeded activities considerably, cut time - almost half.

(2) Microfilm more convenient because cartridges can be handled easier than the heavier printouts.

(3) Microfilm is much cleaner to use than printouts - no carbon mess.

(4) Microfilm is physically easier to use than printouts - less fatigue from long batch searches.

(5) Eliminates changing the binders each week.

A similar study by Yale University indicates that our responses parallel those reported in their findings.

(3) Indexing

To facilitate searching, a simple method of indexing was devised. The computer tape generated for microfilming contains a series of 10 blank pages for every 100 pages of information. When advancing the microfilm in the viewer, the blank pages appear as a break in the pattern on the screen. A computer-generated index, which accompanies each microfilm cartridge, shows the numbered sections and the title that begins each section. This allows the operator to locate the section he is in and the number of the section that contains his title. The operator would then count the breaks in pattern until he arrives at the section containing his title. The operator would then scan at slower speeds. The index allows the operator to advance rapidly to a generalized area, and eliminates a stop-and-go search.

Observations

During the 4 months period, little or no use was made of the index. The majority of the users felt that the stop-and-go method coupled with a knowledge of approximately how long they would have to advance to a section was much faster than the index procedure.

The Yale study previously mentioned also concluded that speed of retrieval of microfilm was comparable if not faster than the computer printed list. They further indicated that bar-coding was a successful method of indexing.

(4) Readers

The evaluation of the Memorex readers was based on the criteria provided in Library Technology reports entitled "The Selection of a Microfilm Reader," November 1968.

Size of format - 16MM	Acceptable
Compatibility between reduction ratio employed in making the film and the magnification of the reader (24: 1 reduction - 24: 1 magnification)	Acceptable
Size of reader screen - 11" x 14"	Acceptable
Clarity on screen - sharp edge to edge	Acceptable
Image rotation - fixed	Acceptable

Generally speaking, the readers have performed well. Adjustments were required initially, but they have been infrequent and down-time insignificant. None of the readers has required major repairs. The ease of operation and their relatively low cost make them extremely attractive for library operations. The motorized are more popular because of the speed in advancing the film. The cartridges can be removed without rewinding the film, a very desirable feature, particularly if used with code line indexing. Inserting the cartridge turns it on and ejecting the cartridge turns it off. A limitation on the rotation restricts the reader to cine mode.* Readers with rotation can accommodate both cine and comic modes.* This does not appear to be a critical factor at the present time.

*Cine mode - same as movie film: one frame below the other
Comic mode - same as comic strip: frames are side by side

Observations

The microfilm readers used during this experiment were two Memorex 1642 manual crank, and three Memorex 1643 motorized. Both models featured snaploading, no threading, no rewinding necessary for removing cassettes, and adjustable screen illumination. Listed below are some of the characteristics of the readers:

Screen -	11" high x 14" wide, neutral tint, reversible glossy or matte finish
Magnification -	Fixed at 24X
Lamp -	Quartz halogen -- for constant illumination during life of bulb. Fan for lamp and optical system coding.
Image -	Full size (11" x 14") image on screen when viewing, 90 fixed image rotation.
Film -	Uses 16MM film in 100-foot roll or Memorex cassette form.
Film Drive -	1642 - manual; 1643 - motorized
Physical Dimensions -	18" x 16" x 16"

COM Recorders

The Memorex 1603 recorder utilizes fiber optics for converting digital signals to alphanumerics. Though cheaper and simpler than other methods such as electronic beam recording, it does not produce the sharpest image.

Microfilm Quality

The overall quality of the microfilm has been acceptable. At the beginning, it was felt that the characters were not as well defined as they could have been. Particularly, the right side of each frame was of poorer quality than the center or the left side. Improvements were made by adjusting the COM recording device and utilization of a better quality microfilm.

At no time was the quality so poor that the films were not acceptable.

Advantages (library)

(1) Printing at computer tape speeds

(2) Retrieval coding placed on records as created to provide indexing

(3) Smaller records storage

(4) Reduced cost of supplies and materials

(5) Microfilm does not require decollating, bursting, or binding

Disadvantages

(1) Requires high cost COM device making in-house use not feasible at the present time (overcome by out-of-house COM).

(2) Requires viewers to display information.

(3) Use of printout affords random access capability while microfilm cartridges require sequential scanning of film.

(4) Microfilm is "24 hours older" than the printouts. Production of microfilm requires processing after printout could have been produced.

Conclusions

(1) The COM experiment has provided conclusive evidence that microfilm can be used as a realistic and less expensive method of disseminating information in the library.

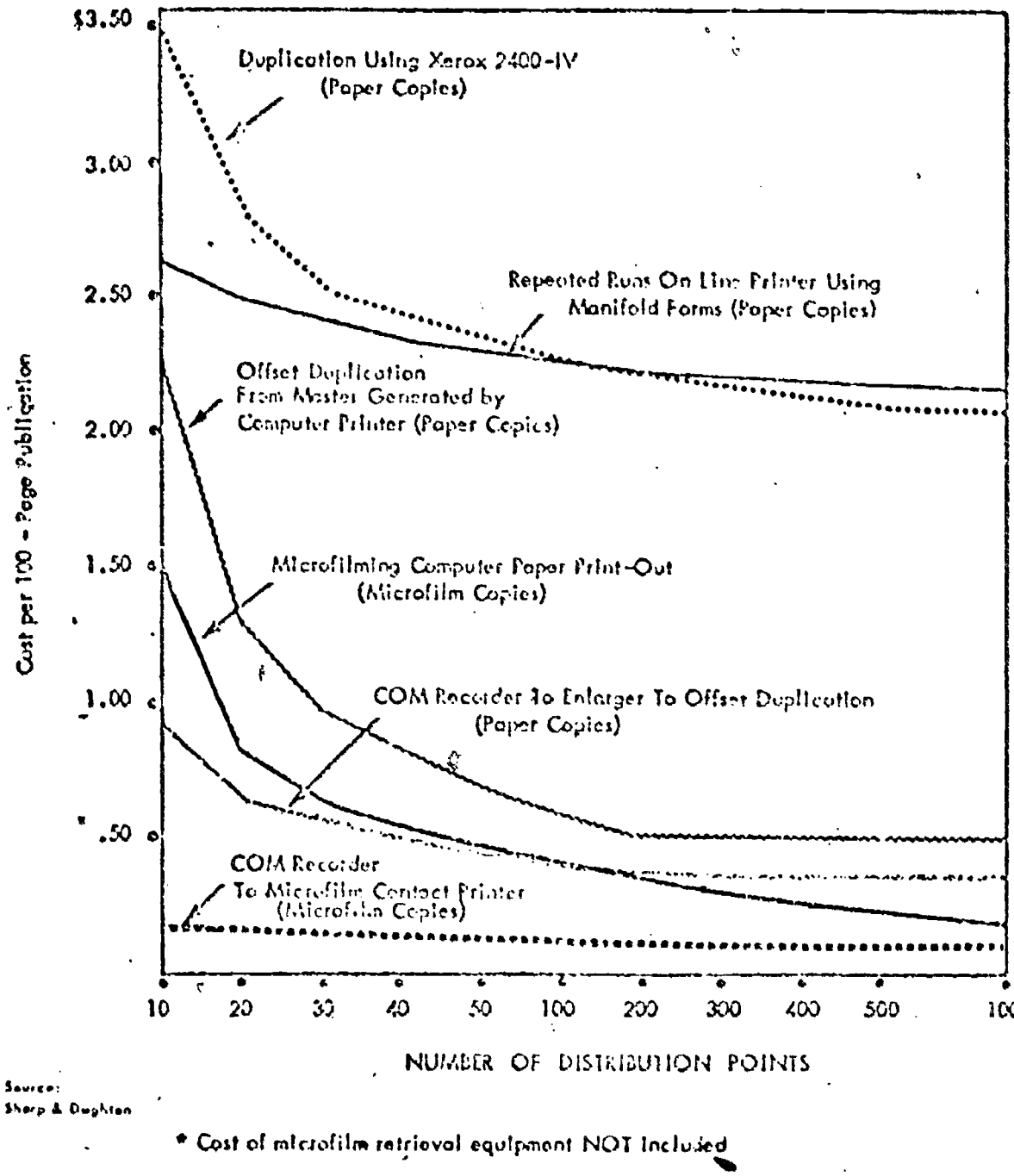
(2) Multiple copies on microfilm can be produced for considerably less money than other methods.

(3) There is no significant objection by the user using the microfilm and reader instead of computer printouts.

(4) Bar graph indexing might speed up the present search operation.

(5) Simplicity in reader operation is a desirable feature for microfilm readers.

(6) Distribution by mail is more practicable for microfilm than for the computer printout.



Source:
Sharp & Dugliton

* Cost of microfilm retrieval equipment NOT included